GOVERNMENT OF INDIA
ARCHAEOLOGICAL SURVEY OF INDIA
Central Archaeological Library
NEW DELHI

ACC. NO. 70917
CALL NO. 025.401 | Sar | Seh

D.G.A 79

MUNSHIRAM MANOHARLAL
PUBLISHERS PVT. LTD.
ORIENTAL & FOREIGN BOOK-SELLERS

70917

UNIVERSAL DECIMAL CLASSIFICATION

70917

LIBRARY

UNIVERSAL
DECIMAL CLASSIFICATION
Structure and Methodology

70917

J L SARDANA
R L SEHGAL

025.401
Sar | [illegible]

Ess Ess Publications
NEW DELHI-110 002

अवाप्ति संख्या 70017 दिनांक 24.12-83
निर्देश संख्या 025.401/Sar/Seh
नई दिल्ली
केन्द्रीय पुरातत्व पुस्तकालय

Copyright © J L SARDANA (1934-), and
R L SEHGAL (1951-)

First Published : 1983

Rs. 100.00

Published by :
Sheel Sethi (Mrs.)
for Ess Ess Publications
4837/24, Ansari Road,
New Delhi-110 002

Printed at

S. Narayan & Sons, Delhi-110 006.

PREFACE

The Universal Decimal Classification (UDC) owes its origin to an ambitious project, sponsored by the International Institute for Bibliography in the year 1895, for the preparation of an index to recorded human knowledge—a 'Universal Index'. In order to use a classified arrangement for this Index, the two Belgians Paul Otlet and Henry La Fontaine, chose the Decimal Classification of Melvil Dewey as the basis and the UDC was developed as a general classification scheme. The project, on account of various reasons, was ultimately abondoned but the first French edition of the UDC was published in 1905.

During the preceeding eight decades, since its origin, the UDC has gone into variety of editions. An abridged version of the full UDC schedules was first published in 1948 by the British Standards Institution and this version is now available in 16 major languages of the world. The scheme though not based on rigorous theoretical foundations has been so designed that because of its internal structure any item once coded and filed correctly can be readily found from whatever angle it is sought. It is being used increasingly by all types of libraries for book classification, indexing and information retrieval purposes, and it is estimated by different authors that it is being used by about 100,000 libraries of all types and Information centres. Its use is compulsory in certain countries.

The present work as would be seen from the bibliography appended at the end is not a new work and infact the authors have used all such works while writing this book. However, the need to add one more work to the existing literature has arisen because most of it does not explain the methodology of classifying documents with the UDC. This book, therefore, explains: 'what the UDC is rather than what it ought to be'.

This book has been virtually divided into two parts. The first part consisting of four chapters discusses the development of the UDC, its notational system and the internal structure which includes the various devices, common auxiliaries, special auxiliaries, and their use for extension of the class and the isolate. The second part which is preceeded by a chapter on Practical Classification explains the methodology of classifying documents under ten main divisions of the UDC. The number building has been illustrated under each subdivision. Graded examples and number of exercises have been provided under each chapter of this Part to help in understanding the art and science of classifying documents. Published books, periodical articles, reports, conference proceedings, standards, etc. have been used as examples and exercises throughout the book, and wherever essential brief annotation has also been provided.

With the above points in view, the book has been written to meet the need of students of Library and Information Science, the practising Librarians, Documentalists, Information Scientists. In doing so the twin objectives of simple language and lucidity in style have been kept in mind.

The authors shall feel grateful for any suggestions to improve the book.

We are thankful to the Publisher and the Printer for their cooperation in bringing out this publication in time.

Delhi
15 February, 1983

J L SARDANA
R L SEHGAL

Recd. from Munshiram Manoharlal Pub, Bill No 63334 dt 23/11/83, Rs. 100/-

CONTENTS

Preface v

A Development of UDC 1

B Notation 12

C Internal Structure 21

D Practical Classification 35

0 Generalities 43

1 Philosophy, Metaphysics, Pyschology, Logic, Ethics and Morals 54

2 Religion and Theology 64

3 Social Sciences 75

4 Philology, Linguistics, Languages 94

5 Mathematics and Natural Sciences 108

6 Applied Sciences, Medicine and Technology 130

7 The Arts, Recreation, Entertainment and Sports etc. 157

8 Literature, Belles-Lettres 171

9 Geography, Biography and History 181

BIBLIOGRAPHY 191

APPENDIX : List of UDC Schedules 195

INDEX 203

CHAPTER A

DEVELOPMENT OF UDC

1 MEANING OF CLASSIFICATION

The term classification is defined differently in different disciplines, e.g. in Biology it is defined as the assignment of plants and animals to groups within a system of categories distinguished by structure, origin, etc. The usual series of categories is *phylum* (in zoology) or *division* (in Botany), *class*, *order family*, *genus*, *species*, and *variety*. In official correspondence the records and documents are classified as 'confidential', 'secret', 'restricted circulation', and so on. In general it means putting like things together and separating unlike ones. In Libraries, Documentation centres and Information centres we are concerned with arranging documents for quick retrieval. Therefore, in Library Science it means arranging books and other reading materials according to some system. This arrangement usually is by subject. The system is to have certain objectives and goals. According to Sayers, "It is that exercise of power of perception and reason which enables us to assemble things in an order of likeness, and to separate them according to an order of unlikeness." The likeness or unlikeness is determined by the characteristics as basis. Documents, on this basis, are classed into various classes. There can be various characteristics e.g., colour, size, contents or subject matter, etc. But the basic objective of classifying documents in libraries is not merely likeness or unlikeness but the order should be helpful in: (i) placing the documents on the shelves; (ii) easy location and accessibility; (iii) quick retrieval; and (iv) bringing together like and unlike documents. The emphasis is, therefore, on easy accessibility, helpfulness and usefulness so that the readers can search or get documents without any difficulty. According to Mann, "classification is the arranging of things according to likeness and unlikeness. It is sorting and grouping of things, but, in addition classification of books is a knowledge classification with adjustments made necessary by the physical form of the books".

Library classification is one of the tools for a librarian to bring all related documents together and arrange them in a filiatory order. The purpose of librarianship being to serve the reader with the documents he needs. All tools and techniques employed are means to this end. The arrangement of the documents should, therefore, be such that which would save the time of the reader in his pursuit of knowledge, information and even amusement. "Libraries are not brought together as museums to exhibit what we have called the fossiles of knowledge . . . The books are collected for use. They are arranged for use, and it is use which is the motive for classification . . . In an unclassified library the books are classified over again every time a man wants to use them. It is a labour saving device to enable them in classes for all instead".

2 SCHEMES OF CLASSIFICATION

It is generally accepted that the following general schemes of classification are the major schemes of classification.

1 Dewey Decimal Classification,
2 Universal Decimal Classification,
3 Library of Congress,
4 Colon Classification, and
5 Bibliographic Classification.

2.1 DEWEY DECIMAL CLASSIFICATION

The Dewey Decimal Classification (DDC) was formulated by Melvil Dewey in 1876. It is now in the 19th edition (in English). The present edition is in 3 volumes and is a hierarchical scheme of classification following the principle of general to specific. The universe of subjects has been divided into ten main classes (0, 1, 2, 3, 4, 5, 6, 7, 8, 9). The notational base of the DDC is Arabic numerals and each class consists of the three digits and a decimal is added after third digit. This system of notation provides for the division of the universe of subjects into ten main classes which are further subdivided into 10 sub-classes or sections. According to the Editors of the DDC, the scheme can be used for broad classification and close classification. It is available in full edition and an abridged edition.

2.2 UNIVERSAL DECIMAL CLASSIFICATION

The present work deals with the UDC: structure and methodology. Therefore, various aspects: History and development have been discussed in the subsequent sections; whereas the notation, its use for different purposes, and methodology of number building, etc. have been discussed in subsequent chapters.

2.3 LIBRARY OF CONGRESS CLASSIFICATION

The Library of Congress founded in the year 1800 had been classifying books by size until 1812, Francis Bacon's Classification of knowledge, etc. until it developed its own system of classification in 1901. The whole universe of knowledge has been divided into 21 classes which includes a class for general works. The various disciplines having been assigned to different alphabets thus making the base quite broad. These alphabets and the combination of alphabets A, B-Bj, C, D, G, H, etc. are used for the classes: General works, Polygraphy; Philosophy; Auxiliary sciences of History; History; Geography, Anthropology, Folklore, etc; Social Sciences; etc. respectively. The base is extended by the use of Indo-Arabic numerals from 1 to 9999 and the expansion of these numerals is done by the use of decimals or Cutter Numbers. This scheme has certain advantages over the DDC because of the use of mixed notation, principles of literary warrant, synthetic devices which facilitate construction of numbers, etc.

2.4 COLON CLASSIFICATION

Dr SR Ranganathan is the originator of the Colon Classification (CC) Scheme. The scheme was forged *in 1924 and* the first edition was published in 1933. Since then it has run into six editions. The reprint of edition 6 published in 1963 has an annexure which incorporates certain changes in the original sixth edition. An important amendment amongst the various changes, being the introduction of an indicator digit (') in place of dot (.) for time facet. The seventh edition which is expected to be freely faceted scheme is yet to be published. The CC is analytico-synthetic scheme and is based on principles of classification. It makes use of various devices such as phase analysis, subject device, alphabetical device, chronological device, classic device, etc. in classifying the documents. CC has a large notational base and uses mixed notation i.e. lower case and upper case alphabets, indicator digits to connect different facets, etc.

2.5 BIBLIOGRAPHIC CLASSIFICATION

Henry Evelyn Bliss is the originator of the *Bibliographic Classification*. This appeared in full form during early fifties of the present century—precisely during 1940-53 and was entitled '*Bibliographic classification, extended by auxiliary schedules for composite specification and notation*. The second edition (BC 2) publication of which was started in 1977, has been planned to be a major work. While retaining the foundations of BC 1, it incorporates the theoretical work carried out by the CRG (British Classification Researh Group). As in the UDC the (BC2) also has schedules of auxiliaries. These consist of form subdivisions, subject subdivisions, subdivisions of persons, and subdivisions of places, languages, periods and ethnic groups.

The BC2 makes use of the principles of facet analysis, literary warrant, etc. It uses mixed notation i.e. alphabets in capitals and Arabic numerals. In place of colon (:) in the UDC it makes use of hyphen (—) to separate different subjects.

3 UDC AND OTHER GENERAL SCHEMES

The schemes discussed so far have advantages and disadvantages but neither CC, nor BC and even LC are so popular throughout the world as the DDC or the UDC. Because of the UDC adapting the DDC, the libraries classifying with DDC could use the UDC whenever there was need to use extensions of the DDC. The advantage in the UDC being that it is a faceted classification and has far greater functional capacities than any other scheme of classification.

4 THE UNIVERSAL DECIMAL CLASSIFICATION

4.1 ORIGIN

The first International Conference on Bibliography held in 1895 at Brussels, amongst its various recommendations helped in the establishment of Institut International de Bibliographie (IIB). On the initiation of two Belgians—Pault Otlet and Henry La Fontaine, the Institut International de Bibliographic sponsored a project for the preparation of *Un Rêpertoire Bibliographique Universel.* This meant the preparation of classified card index to all published information. It could not be taken up without the use of a scheme of classification. The only general scheme of classification available was the DDC. Therefore, the IIB sought the permission from Dewey to expand the DDC and use it for the above project. Thus originally the Universal Decimal Classification (UDC) based on the extension and the adaptation of the edition 5 of Dewey Decimal Classification Scheme (DDC) (1894) was published in 35 parts during 1897-1905. The first complete international edition was published in French language in the year 1905. It was entitled *Manuel du Rêpertoire Biblographique Universel.* Initially the work of expansion of the DDC was taken up for the preparation of a Universal Index but this idea did not last very long and the expanded schedules which had come to be known as Brussels expansion could stand on its own and in 1927 the work on 2nd edition was begun. Otlet and La Fontaine were joined by another important person who played a crucial role in the development of the UDC during the suceeding three decades: Frits Donker Duyvis. Donker Duyvis was made responsible for the revisions of the Schedules of Science and Technology and the originators i.e. Otlet and Fontaine were responsible for social sciences and humanities. The second complete edition was published during the years 1927 and 1933. The title was changed and it was *Classification Decimale Universelle.* Work on third full edition in German language began in 1934 and was completed in 1952. Its index was completed in 1953. It has been published under the title *Dezimal Classifikation.* It comprised of seven volumes of tables and 3 volumes of alphabetic index. It is most upto date edition. The work done by Bradford was the foundation for the development of the Fnglish edition. The work on the 4th edition, in English language entitled *the Universal Decimal Classification* began in 1940 under the auspices of the British Standard's Institution (BSI) and different fascicules are being published. The BSI is the national body for the English edition of the UDC. The first schedules were published in 1943. The details of different schedules in print are given at the end of the book.

The abridged edition in English language (BS 1OOOA) appeared for the first time in 1948, the second edition was published in 1957 and the third in 1961. The index of the 2nd edition was greatly expanded and contained 20,000 entries as against 2,000 in the first edition. The third revised edition was also published in 1961. Abridged edition is available in 16 languages and the abridged edition forms the most important method of making available the UDC to the world. A trilingual abridged edition having French, German and English side by side in 3 columns was published in 1958 and a ten year supplement was published in 1968.

The UDC derived originally from the fifth edition of the DDC also includes materials published in the later editions of the DDC in its abridged editions.

4.2 VARIETY OF EDITIONS

In addition to the abridged edition and the full edition, the UDC is available in various authorized editions in many languages and at varied levels. FID authorized and other UDC editions are available in at least 21 languages. In certain countries like USSR, it is an officially prescribed system for classifying documents in science and technology, whereas in countries like UK, Hungary, etc. it is issued as an official standard. The UDC includes the following variety of editions: (a) Full edition; (b) Abridged edition; (c) Medium-length edition; (d) Editions of special parts; (e) Excerpt editions; and (f) Conventional editions. The full editions usually consist of 1,50,000—2,00,000 items; abridged editions 15,000—20,000 items; and the medium length editions have about 50,000—65,000 items. The relationship between the full edition and the abridgement is 10 : 1 ; and the medium size edition is in between the full and the abridgement. However, according to Jack Mills, "it is not possible to determine the pattern by which the full schedules are reduced to medium size". Special subject editions have been published from time to time. One of them being *ABC classification for* Architects, Builders, and Civil Engineers. It contains full versions of the relevant subjects and abridged versions of the supporting subjects. The other editions also have varying number of items.

4.3 SIZE OF DIFFERENT EDITIONS

An idea of the growth of the UDC, besides the variety of editions can also be had from the number of terms, concepts or more generally the number of subdivisions in successive editions of the UDC. The first complete international edition (1905) had about 33,000 subdivisions; the second edition (1927-33) had over 70,000 subdivisions and the third edition about 1,40,000 subdivisions. Today it is estimated to be having more than 2,10,000 subdivisions and a year's issue of extensions and corrections lists about 1,750 items which is inclusive of amendments to the existing texts.

4.4 ORGANIZATIONAL SUPPORT

The Institut International de Bibliographie set up earlier became the Institut International de Documentation (IID) in the year 1931 and in 1937 its name was again changed to its present name the Federation International de Documentation (FID). In 1929 Frits Donker Duyvis of the Dutch Patent Office became the secretary of IIB and continued to be in office until his retirement in 1959. He played an important role in the development of the UDC for three decades.

The FID Classification Department (FID/CID) which looks after the revision of the UDC is very small as compared with that of the DDC or the LC. The staff whose strength has never been more than two looks after the coordination and other routine work of FID/CID. However, various members of special subject revision committees help to channel all prosals to improve the UDC.

4.5 REVISION

The Classification Department of the FID i.e. FID/CID at The Hague is responsible for the revision and development of the UDC. The ultimate coordinating body of the UDC is the Central Classification Committee (CCC). This committee is assisted in its work, directly or indirectly, by the national committees, special subject committees in each country and the international subject committees. Thus it follows a decentralized procedure for revision of the UDC.

The revision is done in the following three ways:

1 Extension of topics by more detailed subdivision;
2 Minor alterations of existing subdivision notation; and
3 'Starvation policy' introduced by Donker Duyvis.

This policy assumes a fairly static collection and the opportunity for reclassification. Donker Duyvis used the unused notation adjacent to the class meant for revision. The problem is acute in dynamic and rapidly changing subjects.

The users of the UDC wanting to suggest amendments or extensions to the schedules have to suggest the same to a national body in their respective countries. The national body ascertains whether any revision is in progress elsewhere and if not, the original user is asked to prepare a 'draft extension'. This draft is considered by the national special subject panel and the national body. After it has been approved by these two bodies, it is considered by the International subject panel and in case the same has been approved, it is submitted to the Central Classification Committee of the International Federation for Documentation i.e. FID/CCC. This committee being the ultimate coordinating body examines the recommendations in the light of the other parts of the schedule and the scheme. In case it is approved, it is published as a P-Note. The publication in P-Notes makes the proposed extensions public and the comments if received within a period of 4 months are considered by the FID/CCC and the proposal may be withdrawn. In case no comments are received the proposal gets incorporated in the schedules of the official UDC.

Originally there were two kinds of P-Notes, PE-Projects d'Extension and PP, Projects Provisoires. The PE were those which had gone through the procedure described above, and the PP Notes were those which emanated from the FID/CCC. The PP Notes were widely circulated for comments. The PP Notes were provisionally accepted after 4 months if no objections are received.

The pace of revision of the UDC has been rather slow. Various reasons which can be attributed to this are:

(i) An individual i.e. Donker Duyvis working almost entirely alone;

(ii) The cumbersome decentralized pattern, though allowing for a greater say by the user, is hardly helpful in the revision process;

(iii) The publication mechanism followed earlier has now been partially overcome by the use of modern techniques.

The accepted P-Notes were published as *Extensions and corrections to UDC* half yearly and these publications were cumulated every 3 years. Thereafter a new series was started.

5 SIGNIFICANCE OF THE UDC

The UDC is essentially a practical system for numerically coding information, so designed that any item, once coded and filed correctly, can be readily found from whatever angle it is sought. It should not be regarded as a philosophical classification of knowledge, nor is the order of subjects of primary importance. What is of greater importance to a scientific classification is the introduction of an auxiliary apparatus of connection and relation signs, lacking in the original Dewey system. It has made the UDC really universal.

The significance of the UDC system lies in its immediate application to classify the whole field of knowledge. Some of the strengths of the UDC that account for its success are:

(a) It was the first system of classification, which was designed to provide for the detailed control of specialized information stores. It now provides a switching code for linking otherwise incompatible languages (code or natural language) in the many highly specialized information systems now proliferating;

(b) In the last two decades, experiments in many countries have shown the great possibilities attainable with computers and UDC;

(c) It is also useful in maintaining and sorting catalogues information searching and retrieval, producing classified lists of new material, cross-referencing and generating alphabetical indices;

(d) It is a classification in the strictest sense depending on the analysis of ideas so that related concepts are brought together. Thus avoiding alphabetical arrangement which also brings in systematization of an haphazared nature;

(e) It is widely used throughout the world. The number of users is estimated by different authors to be about 100,000 including specialized libraries and information centers. According to FID the use of UDC is compulsory in scientific and technical libraries in USSR;

(f) The notation is simple and easily understood; and

(g) The UDC schedules provide clear directions for the number building.

CHAPTER B

NOTATION

1 INTRODUCTION

The notational system in any scheme of classification is of great significance. A bad notational system mars the value of the scheme of classification. The UDC which is based on the outline and the notational base of the DDC while using the same outline and the decimal fraction notation also made use of the other species of the notational system. Some of the modifications in the Dewey Scheme are that the place could be added in DDC by using the indicator digit 09 but the UDC used parentheses. The form and dates have also been distinguished by using different digits. The need to be able to relate different subjects necessitated use of colon or a plus (+) sign and the same has been used to join two numbers and thus indicate relationship between different subjects. The UDC thus uses the mixed base consisting of the following five species.

1 The 10 Indo-Arabic numerals;
2 The 26 Roman alphabets: (i) Capital letters, and (ii) Small letters;
3 Some punctuation marks; and
4 Some mathematical symbols.

The scale of absolute values of digits is fixed.

1.1 INDO-ARABIC NUMERALS

The whole field of human knowledge has been divided into 10 main classes which have been further subdivided:

.0 Generalities: Methodology, Documentation, Scripts; Recording collection and Dissemination of information

.1 Philosophy, Metaphysics, Logic, Ethics, Psychology

.2 Religion, Theology

.3 Social Sciences including Statistics, Law, Education

.4 Philology, Languages, Linguistics

.5 Pure Sciences, Mathematical and natural

.6 Applied Sciences: Medicine and Technology

.7 The Arts, including Architecture, Photography, Entertainment and sports

.8 Literature

.9 Geography, Biography, History

For the sake of convenience the initial decimal point is omitted though all UDC numbers are decimal fractions and less than unity which determines the sequence of numbers. The decimal fractional notation is used when 10 divisions are needed and centesimal when 100 divisions and so on. However, the decimal point is inserted, after every third figure, as a visual aid or as a pause devise. It breaks the blocks of notation into sets of three digits. The position of the point is varied while introducing the .00 and .0 auxiliaries, or for some mnemonic purposes such as the parallel division of 91 and the (4) to (9) auxiliaries e.g. Geography of France 91.44. The above deviation, however, does not vary or affect the filing order.

The above main branches are further subdivided as a decimal fraction, and the principle being followed is 'general to particular''

6	Applied sciences, medicine, technology
66	Chemical industry, chemical technology
661	Chemicals (Fine, heavy, etc.)
661.1	Special chemical industries, Fine chemicals
661.18	Colloidal and surface-active chemicals
661.183	Adsorbents and absorbents
66.183.7/.8	Silica gel, Activated alumina, etc.
661.184	Semicolloidal products, etc.

1.2 THE 26 ROMAN ALPHABETS

1.2.1 Capital Letters

The various schedules of the UDC help to classify the subject but the names of persons, or corporate bodies or of substances are individualized by the alphabetical device which makes use of the 26 Roman capital letters i.e. A/Z.

e.g. Works of Shakespeare	820 (Shakespeare)
or	820 Shakespeare
or	820 (Shak)
or	820 Shak
or	820 (S)
or	820 S

The use of parentheses is discritionary

1.2.2 Lower case Letters

The individualization of the names as indicated above is not done in isolation by 26 upper case letters but lower case letters may be used along with the capital letters.

1.3 PUNCTUATION MARKS

The various punctuation marks which are used in classifying with UDC are given below:

Colon	:	
Inverted comma	"	"
Hyphen and a decimal point	=	.

1.4 MATHEMATICAL SYMBOLS

The mathematical symbols are used while using the common auxiliaries and special auxiliaries. They are:

Parentheses	( )
plus	+
Slash or Stroke	/
Square brackets	[ ]
equal sign	=
zero or naught in the parentheses	(0. . .)
equals in the parentheses	(= . .)

and .00 i.e. a double zero or double naught after a decimal point

2 SYMBOLS AND THEIR SIGNIFICANCE

Each of the above digits expresses different significance. The table below illustrates the significance of each one of them.

TABLE 1

SYMBOLS AND THEIR SIGNIFICANCE

Symbol	*Expressed as*	*Significance*
1	2	3
+	Plus	Connection of non-consecutive numbers
/	slash or stroke	connection of consecutive numbers

1	2	3
:	Colon	Relation sign
[ ]	Square brackets	Algebric subgrouping
=	Equal sign	Language
( )	Parentheses	Geographical division
(0 . . .)	naught followed by arabic numerals in the parentheses	Form
(1/9)	Arabic numbers in parentheses	Place
(= . .)	Equal sign in parentheses	Race and nationality
" "	Inverted commas	Time
.00	Point double naught	point of view
—	Hyphen	Special analytical numbers
.0	Point naught	special analytical numbers
A/Z	A to Z	Individual subdivision or for alphabetic device

3 MNEMONICS

The mnemonic feature in a notation is an asset to any scheme of classification. A classification scheme exhibits the mnemonic value when its notation has the art of assisting memory. The use of mnemonics in modern classification schemes is very great. Sayers and Bliss have expressed its utility in the following words. According to Sayers, "There is very general quality in modern classification notations, which is ingenious and within limits, of great value to classifier. This is its mnemonic quality; its power of assisting memory and reducing the work of reference to tables and indexes to the minimum. By mnemonic notation we mean a notation which has always the same significance wherever it appears in the classification". Bliss observes, "notation as a kind of symbolic language depends extensively on memory of meaning. In learning to read and write a new language we gradually learn the words and their meaning and remember more and more of them. In like manners librarians and users of libraries gradually learn the order of the classes and remember the class marks, though they continue to make use of the catalogue, shelf lists and index to schedules. The more systematic the system is the more readily they will learn and the more efficiently they will remember. This is the natural and rational ground for system of mnemonics or symbols that may be readily and systematically remembered." Thus by mnemonic notation we mean that wherever a subject or form appears it has always the same notation throughout the scheme of classification.

The following are the advantages of mnemonics in notation:

(i) It assists in allocating numbers to new subjects;

(ii) It assists and promotes the ability to recollect class numbers; and

(iii) It helps in communication and in reading.

3.1 TYPES OF MNEMONICS

The mnemonics is generally considered to be of following types: (a) Alphabetical mnemonics; (b) Restricted mnemonics; and there are three kinds of restricted mnemonics, viz.

1 Scheduled mnemonics;

2 Systematic mnemonics; and

3 Seminal mnemonics.

The application of the alphabetical device to represent an idea by the first letter or by the first few letters in the names over and again exhibits the use of alphabetical mnemonics. This type of mnemonics should, however, be preferred as a last resort and only when the use of the alphabetical sequence is more helpful than any other sequence. The scheduled mnemonics whereas is available in the scheme for classification. It uses one and the same digit or digit-group, as the case may be to represent an isolate idea or an array isolate idea in whatever subject it may occur. The various devices available in the UDC signify the scheduled mnemonics. In the case of systematic mnemonics the digits use to represent an array isolate idea in an array are set to run parallel to the sequence which is arranged with the help of various classificatory principles and in particular the principle of helpful sequence. The use of the same digit to denote seminally eqivalent concept in whatever subject they may occur is known as seminal mnemonics. The UDC does not make use of seminal mnemonics because of its starvation policy introduced by Donker Duyvis.

3.2 AVAILABILITY OF MNEMONICS

(i) Alphabetical mnemonics:

Biography of Shakespeare	92 (Shak) or 92 Shak
Biography of Schiller	92 (Schil) or 92 Schil

(ii) Scheduled mnemonics:
A: use of "As . . . ."

Class Number	*Subject*	*Instruction*
343.14	Evidence, oath, proof	As 347.94
576.85	Systematic bacteriology.	As 616.98
624.19.02/.07	Parts, calculations	As 624.02/.07
79.094/.097	Filmed, broadcast, televised.	As 7.094/.097
82/89	Literature of individual languages.	As 42/49
990	History of Oceania & Polar regions	As (9)

B: *Use of Auxilliary schedules e.g. Form division*

31 (021)	Handbook of Statistics
58 (021)	Handbook of Botany
59 (021)	Handbook of Zoology
61 (021)	Handbook of Medical Sciences

1 *The last digit af a class number as a subdividing and mnemonic digit*

EXAMPLES

550.2	Geoastronomy	2 is the last digit of 52 representing Astronomy
550.3	Geophysics	3 is the last digit of 53 representing Physics
550.4	Geochemistry	4 is the last digit of 54 representing Chemistry
550.7	Geobiology	7 is the last digit of 57 representing Anthropological and Biological Sciences

2 *The provision to use* "By (:) *which links related concepts*

EKAMPLES

Labour legislation and control of duration of work	351.83:331.81
Labour legislation and control of working conditions in shops	351.83:331.82
Labour legislation and control of standard of living	351.83:331.83
Labour legislation and control of spare time recreational facilities	351.83:331.84
Labour legislation and control of technical training	351.83:331.86

Labour legislation and control of labour disputes	351.83:331.89

3 *Use of special auxiliary divisions*

EXAMPLES

Operation, control and regulation of Agricultural implements	631.3-5
Servicing, maintenance and protection of Agricultural implements	631.3-7
Protection, damage and loss of Agricultural implements	631.3-75
Theory of mechanics	531.01
Theory of fluid mechanics	532.01
Theory of gas mechanics	533.01
Theory of vibrations	534.01
Theory of light & optics	535.01
Theory of heat	536.01
Theory of electricity	537.01

CHAPTER C

INTERNAL STRUCTURE

1 INTRODUCTION

The UDC is one of the oldest synthetic schemes of classification. It is used mostly in scientific and technical libraries and is strongest in these fast changing subjects. The revision procedure discussed in the earlier chapter and the internal structure help to overcome the problems of developments in subjects. The syntheses is achieved by using punctuation marks and auxiliary schedules which link and add to the different subjects represented by Arabic numerals of the basic DDCs notational system.

2 AUXILIARIES

The auxiliaries help in eliminating repetition in the various schedules because they group certain recurring and general subordinate concepts such as language, form, place, time, race and nationality, etc. The tables of auxiliaries serve the mnemonic function as well. The UDC uses two kinds of auxiliaries: general or common, and special. The general or common auxiliaries can be used in all the schedules of the scheme whereas the special auxiliaries can be used only in specified schedules or their parts. The common auxiliary can in turn be divided into two groups—those that join the notational elements by adding, extending or by indicating the relation between two subjects, and those which combine the subordinate concepts grouped under various tables of auxiliaries.

2.1 COMMON AUXILIARIES

The common auxiliaries are applicable through out the various main schedules or tables. The various tables of common auxiliaries and their connecting symbols are given below :

(a) Common auxiliaries of Language	=
(b) Common auxiliaries of Form (of presentation)	(0. . .)
(c) Common auxiliaries of Place	(1) to (9)
(d) Common auxiliaries of Race and Nationality	(=. . .)
(e) Common auxiliaries of Time	" . . . "

2.1.1 Auxiliaries of Addition, Extension, and Relation

2.1.1.1 *Addition Sign*

The sign + ('plus' or and) can be used to join together two or more subjects which are not available in the adjacent schedules. Thus the sign is used for non-consecutive UDC numbers. The subject denotes commonly associated concepts but these have not been assigned any place in the schedules.

Chemistry and Chemical Technology	54+66
Mining and Metallurgy	622+669
India and Pakistan	(540)+(549)

In order to retrieve individual concepts in such groups of subjects associated with each other, a reference is classified under each of its constituent numbers. In order to retrieve individual subjects discussed in a document as associated concepts the UDC provides that such references are classified under each of its constituent numbers and filed separately.

2.1.1.2 *The Extension Sign*

The extension sign/(stroke) is used to join consecutive notational elements. Such a sign is used either for two consecutive numbers or to join the first and the last of a series of consecutive UDC numbers.

Science and Technology	5/6
Electricity and Magnetism	537/538
Christian Religion	22/28
Ethnography, manners, customs	391/397
Communication and transport	383/388
From 1976 to 1981	"1976/1981"

However, when the extension sign is used to share a common higher level the notation of higher level may be omitted.

Semantics and morphology	415.4/.5
AC and DC Electric machines	621.313.2/.3

2.2.1.3 *Relation sign*

The relation sign is one of the most important one. Originally it was used to bring together any notational elements to represent a complex subject. It is now used to link two or more UDC numbers denoting related concepts of approximately equal value. The numbers may be reversed to ensure separate entries for the coordinate ideas. The colon sign has now been joined by brackets and the double colon:

Perception and time	159.93.5:529
Religion and Arts	2:7
Presidential election	324:328.132.7

2.1.2 Auxiliaries of Form and Language

These two common auxiliaries concern the document and its physical aspects. These again have been derived from the DDC.

2.1.2.1 *Form auxiliary*

The DDC, in its earlier editions contained a list of common form subdivisions and the same has now been replaced by standard subdivisions. This division indicates the physical arrangement of form of presentations or form of the material. The perentheses and the naught distinguish it from the other number. The examples given below illustrate the use:

Botany Guide books	58(026)
Glossary of terms in Economics	33(038)
Report on games	796(047)
Directory of Agriculture	63 (058.7)

2.1.2.2 *Auxiliary of Language*

The use of auxiliary is based on the international and multilingual character of the UDC. Primarily use has been made of the schedule 4 dealing with Languages. Use of the auxiliary helps to designate the linguistic form of the various subjects by connecting it with the sign=

=20 English Language
=914.3 Hindi Language

2.1.2.21 *Simultaneous use of Form and Language Auxiliaries*

These can be used simultaneously to designate Form and Language.

Social Sciences Encyclopaedia in Chinese Language	3(03)=951
Handbook of Economics in English Language	33(021)=20
Pocket dictionary of Physics in Russian	53(038)=82

2.1.2.22 *Translations of Specific Works*

Translations may be subdivided in parallel with =2/=9. Further =2/=9 may be added to indicate the language into which the work has been translated.

Chemistry documents translated from German	54/03=30
Economics documents translated from English to Hindi	33/03=20=914.3

2.1.2.23 *Multilingual work*

In order to specify the languages of a multilingual work the languages are cited in an ascending order.

Encyclopaedia of Library Science (Bilingual —French and Spanish)	02(03)=00=40=60
Handbook of Botany (Bilingual—German and Russian)	58(021)=00=30=82

2.1.3 Common auxiliaries of Place (1/9)

The DDC had in its earlier editions provided for "divide like" employing subdivisions of 940-999 and one could subdivide any number. Now we have the area tables. The Colon Classification provides for the use of space isolate. The UDC uses the auxiliary of place to indicate the geographic or topographic detail. The concepts like area, location: central, bordering, north and south are listed at (1). The zones are indicated by (.0) and the area notation (—1) is used for orientation and for points of the compass which include East, South East, South West, North and North West, etc. The area notation (—2) is used for political and administrative units and the division (—3) with regional units. while (—4) deals with national units. Division (—5) is concerned with colonies and other overseas territories. (—6) is devoted to grouping of independent states. Division (—7) covers sphere of private and semi public enterprise which also include the underdeveloped and developed areas. Source and destination is devoted to (—8).

Area notation (2) is used for physiographic designation including subsections on zones, islands, mountains, earth's interior, oceans. The ancient world is classed under division (3) and the division (4)/(9) deal with the modern world. The continents being represented by the division (4)/(8) and (91) to (99) represent oceania, Arctic and Antarctic regions. Australia has been provided along with Oceania, Arctic and Antarctic regions.

Traditional method of grouping has been followed. Very often the regional approach is as: Far East, South Asia, Central Asia, South East. The detailed examination of the schedules indicates the need for revision of the schedule, and even the arrangement of physiographic divisions is not helpful. The UDC while subdividing the divisions makes use of the principles of mnemonics.

The use of the schedule is indicated with the help of following examples:

Indian Fancy dress	688.75(540)
Indian Railwas system	385(540)

When the geographical or regional aspect of the subjects is of especially in indexing the auxiliary may precede the main class number, paramount importance:

India: Its economic affairs	540(354.81)
India: Its railway system	(540),385

The auxiliary may be intercalated in a preferred position. For example, should various aspects of economics and wages of Indian labour be required to be put together, this could be done in the following manner:

Without intercalation

Labour, work, employment	331
Wages, Salaries, pay	331.2
Profit sharing, percentage, royalties	331.24

The intercalation is possible because the facets indicated for these auxiliaries have a closure sign as well as commencement sign. So they can be cited at any point in the number.

With intercalation

331.24 (540)	Economics-Labour-wages-profit sharing (India)

or,	331.2(540) 4	Economics-Labour-wages (India)-Profit sharing
or,	331 (540) 24	Economic-Labour (India)-Wages-Profit sharing
or,	33 (540) 124	Economics-(India)-Labour-wages-Profit sharing

From above example, we understand in the last of four orders, all aspects of the Indian economy will be kept together; in the second, only different aspects of the Indian wage system will be kept together; other aspects of the Indian economy will be scattered.

To suggest the relation between, and association of, places may be expressed with the help of connecting digit being used within the brackets. Examples:

(i) India and (in relation to) Cuba (540:729.1)
(ii) India and (together with) Germany (540+430)
(iii) Arbitration between India and Pakistan 341.63(540:549)
(iv) Marriages in India and Mexico 392.5 (540+72)

2.1.4 Common auxiliaries of Time

Common auxiliaries of time serve to specify date, period, or other important aspects of time, like millenium century, decade, year, day, night, seasons, wet weather, dry weather, etc. All of of these are considered manifestations of the common auxiliaries of "time".

The UDC's time subdivision schedule has invented its own method of indicating time in quotation marks or inverted commas " ". The notation is decimal. However, the UDC has assumed that no date beyond 2999 AD will be needed because the digits 3/9 have been used for various time divisions.

We find that digits 0 and 1 have been devoted to the first two millenia of A.D. The digits 2 is unassigned. The digits 3/7 and their subdivisions are assigned to other time aspects. Under other time aspects, provision has been made for the following sequence of auxiliaries which consists of: past, present, future; seasons of the year; months of the year; peace time, wartime; worktime; rest time; time duration: time intervals; various (non-christian) time reckoning; phenomenoligical divisions.

The following examples will illustrate the use of the time schedule :

1970s represented as	"197"
1st January 1983 as	"1983.01.01"
21st January 1983 as	"1983.01.21"
11th September 935 AD	"0935.09.11"
1960's and 1970's as	"196/197"
65 BC	"-0065"

Centuries or decades are denoted by 2 or 3 figure notation

5th centuary as	"04"
20th century as	"19" (meaning 1900s)
18th to 20th centuries	"17/19"
Sixties and seventies	"196/197"
Sixties and eighties	"199/198"

2.1.5 Common Auxiliaries of Race and Nationality (=...)

Common auxiliaries of race and nationality serve to point out the racial aspects of the subject denoted by any preceding main class number. These auxiliaries (0=/=09) are based on the common auxiliaries of language number of class 4 and are useful for representing races not confined to any one political unit. The common auxiliary of race is a combination of the auxiliary of place and language. It also combines their signs i.e. parentheses and the mathematical signs of equal to =.

African negroes	(=96)
Eskimos	(=947.5)

2.1.6 Common Auxiliary of Point of View

This auxiliary is used when a subject is being studied from the point of view of any particular subject. The general sign colon: which exhibits any kind of relation can also be used but its use is avoided because it creates more confusion in the file of the the documents. The sign .00—(point-naught-naught), is used to express a subject when looked at from a particular aspect or point of view. Each of the subsections .001 to .009 provide a distinct, but comprehensive, approach to the whole field of knowledge. These are never used alone, but added to a main class number. Common auxiliaries of form, place, time, and language may be used if required, but the wider implications of each aspect are denoted with the help of extensive coloning to UDC's other main class numbers. The following is an extract for common auxiliaries point of view from the UDC.

.001 Programme, research, development
.002 Production and technique problems
.003 Commercial and financial aspects
.004 Use, operation, care, etc.
.005 Equipping and installation problems
.006 Site location, accommodation, etc.
.007 Manpower and personnel problems
.008 Organisation and Management
.009 Social and ethical point-of-view, etc.

EXAMPLES

Research in Agriculture	631.001.5
Problems of Petroleum Plant and machinery for production	622.323.002.5
Electrical power production Tarrifs and pricing policy in India	621.039.577.003.13 (540)
Recycling : How to reuse municipal wastes in town, industry, and society	658.56[628.4/.5] .004.8

Electronic control: equipments	621-523.005
Transport, traffic and storage building : Study for research and design	725.3.006.2
Scientific and technical manpower	5/6.007
Set up of medical libraries in India	026:61.008.01 (540)
Competition in cotton spinning industries in India	677.21.052.009.02(540)

One of the most recent addition to the point of view auxiliary is about author's own point of view. The notation is .000

2.2 SPECIAL AUXILIARIES

The special auxiliaries are those, "which express aspects that are recurrent, but in more limited subject range. They are therefore, listed only in particular sections of the main table" Here —0/—9 (hypen-naught-to-nine), .0(point naught), and '(apostrophe) are used on special auxiliary tables. The following is a list of special auxiliaries employed in UDC.

Special auxiliary	*Indicator digit*	*Range of digits*
Hyphen	-	(-00/-009,-0/-09,-1/-9
Point naught	.0	(.01/.09)
Apostrophe	'	

The following examples illustrate the use of (hyphen -)

669.3-41	Copper sheets
621-232	Connecting rods: Its fixed and moving parts
621-777	Identification marking, etc.
621-788	Special safety devices for vehicles and ships
616.314-089.4	Dental dressing and bondaging
617.7-084	Prevention of eye diseases

.0 (point naught) is not used with the form numbers (01)/(09). The main purpose of the .0 (point naught) is to narrow the scope of a subject to a particular phase: For example:

78.01	Philosophy of music
784.092	Vocal music: Competitions
677.21.052	Cotton-Spinning Machines
624.01	Structures according to material and method of construction

The apostrophe ' . . ., is the most recent addition to U.D.C. auxiliary notation. It is used to get a compound number for substance derived from two or more components. It is used widely in metallurgy and chemistry. Thus, its scope is limited to a few schedules in UDC. The following examples illustrate the use of apostrophe.

669.35'5'6	Cu-Zn-Sn alloys (Copper-Zinc-Tin alloys)
547.1'13	Organometallic Compounds
546.33'13	Chemistry of Salt
666.113'41'28	Lime-silica glass

2.3.1 Other Auxiliaries

The auxiliaries of materials and persons are special auxiliaries but can be used as common auxiliaries.

2.3.11 *Materials*

The -03 (hyphen naught three) auxiliaries "indicate the material or constituents of which objects or products are made, and may be applied throughout main UDC schedules 0/9 if material aspect is secondary to the subject content".

Glass bottles	683.512-033.5

2.3.12 *Persons*

The -05 (hyphen naught five) auxiliary denotes persons, used in division 3 (social science) but it is widely applicable. These are now being used as common auxiliaries and are applicable throughout the schedules 0/9.

EXAMPLES

Young librarians	02-053.7
Female librarians	02-055.2
Ethics in children	17-053.2

3 ALPHABETICAL AND NON-DECIMAL NUMERICAL DEVICE

The alphabetical device, in the UDC, as in other schemes is used to specify or individualize the subject by names. To do this appropriate names or initials within brackets or without brackets are used. In cases it is so felt the specifying may be done by adding numerals. The numerals are distinguished from the main UDC numbers, if necessary by prefixing the numeral by the word "No". These devices are used in biographical works and literature.

4 ORDER OF THE AUXILIARIES IN THE COMPOUND NUMBER

In the abridged English edition of the UDC (BS 1000A:1961) it has been stated that the dictating of hard and fast rules in the sequence and order of these auxiliaries is difficult and variations are, therefore, possible. However, the following internal order is an accepted order.

Main No.	Special auxiliaries
0/9	’ . . .01/.09 -0/-9

Common auxiliaries:

view point	place	Time	Form	Language
.00	(1/9)	“ ”	(0)	=

An illustration of the use of these symbols and of the order in which the catalogue entries or the books on the shelves may be arranged is indicated in the table on the next page:

TABLE 1

Order of the symbols in UDC

Name of Symbol	*Symbol*	*UDC Number*	*Significance*
Plus	+	675+677	Leather and textile industry
Stroke	/	675/677	Leather, paper and textile industry
	Simple Number	675	Leather industry
Colon	:	675:338.97	Economic crises in the leather industry
Brackets	[ ]	675 [37]	Instructions in leather work
Equals	=	675=20	Documents (in English language) on leather industry
Bracket-naught-bracket	(0)	675 (021)	Handbook on leather industry
Bracket-one, stroke, nine, bracket	(1/9)	675 (42)	The leather industry in England
Inverted commas	“ ”	675“19”	The leather industry in the 20th century

TABLE *Contd.*

Name of Symbol	*Symbol*	*UDC Number*	*Significance*
A to Z	A/Z	675 Smith	Leather marked Smith
hyphen	—	675-78	Protective arrangements in leather industry
Point double naught	.00	675.007	Personnel in leather industry
Point-naught	.0	675.02	The working of raw leather
Point-one, to point, nine	.1/.9	675.3	Morocco leather

CHAPTER D

PRACTICAL CLASSIFICATION

The art of assigning call numbers and class numbers to aid in the proper placing of documents is known as practical work in classification. It involves understanding of the subject matter, deciding about the subject of the document and translating the same from natural language into a classificatory language that is the language of ordinal numbers. The process of translation involves locating the subject thus decided in the schedules of the classification system used, if necessary with the help of the alphabetical subject indexes, and assigning the appropriate notational symbol i.e. class number by using the apparatus available in the notational plane. This may mean merely copying of the class number from the schedule or involve the number building i.e. constructing the class number synthetically, by using various devices, etc. available in the system.

1 CLASSES IN THE UDC

The UDC divides the entire field of knowledge into 10 divisions: the use of 0 and the divisions 1 to 9. The following outline has been followed in the abridged English edition of the UDC (BS 1000 A of 1961).

0 Generalities
1 Philosophy. Metaphysics. Psychology. Logic. Ethics
2 Religion. Theology
3 Social Sciences. Sociology. Political Science, Economics. Law. Public Administration. Military Science and Defence. Education
4 Philology. Linguistics. Languages
5 Mathematics and Natural Sciences
6 Applied Sciences. Medicine. Technology. Management
7 The Arts. Recreation. Entertainment. Sports, etc.
8 Literature. Belles-letters. (Philology, Linguistics, Languages)
9 Geography. Biography. History

The details of each main division have been given in the subsequent chapter.

The class 4 has been kept vacant and philology, linguistics and languages have been placed under 8 instead of the class or division 4. This change in the UDC was incorporated as a result of the decision of CCC of 23 September 1962.

2 USE OF UDC

The UDC is available in 16 languages and in various editions. It is used in many parts of the world by libraries and information centres for classifying books and also for information retrieval purposes. The UDC, according to FID Classification Department, is used by well over 100,000 institutions in the world albeit mainly in the USSR, Poland and other East European countries with a substantial number in Latin America and Japan. Its use is increasing in the West, North European countries and other English speaking countries.

3 STEPS IN CLASSIFICATION

Ranganathan has prescribed a procedure for classifying documents in Chapter SB of *Prolegomena to Library Classification* ed 3. According to him the following nine steps may have to be followed in classifying or in assigning a Class Number to a document.

Step 0 Raw Title: Write down the raw title i.e. the name of the subject as it is found in the title page of the document or provided by the classifier in the case of fanciful title.

Step 1 Expressive Title: Derive the Expressive Title from the raw title indicating the basic and isolate ideas in the subject of the document. This may be done by filling up the ellipsis in the raw title, by breaking down composite terms into their fundamental constituent terms according to some principles which set a limit to the semantic depth beyond which one should not go to get the fundamental terms.

Step 2 Title in Kernel Terms: Derive the Kernel Title from the Expressive Title by omitting or removing all the auxiliaries and puffs and retaining all fundamental and constituent terms in singular nominative form.

Step 3 Analysed Title: Derive analyzed title from the Kernel title by marking the Basic Class and inserting against each of the other Kernel Terms symbols for the fundamental category of which it is deemed to be a manifestation and amplifying the symbol for each Kernel Term by prefixes and suffixes to indicate the Rounds and Levels to which they belong. This is done essentially with the help of the wall-Picture-Principle, taking two Kernel Terms at a time.

Step 4 Transformed Title: Derive transformed title from the analyzed title by rearranging all the facets according to the symbols put against them and according to the Postulates of Facet sequence.

Step 5 Title in Standard Terms: Derive the Title in Standard Terms from the transformed title by replacing any term which does not belong to the accepted standard by its equivalent standard term.

Step 6 Title in Facet Numbers: Derive the title in Facet Numbers from the title in standard terms by translating the Basic Class Number or the Isolate Number, as the case may be. This is done with the aid of the classification schedules. When any isolate is new, that is, not already found in the schedule, its Isolate Number is constructed with the aid of the principles of classification.

Step 7 Class Number: Derive the Class Number from the title in Facet Terms by removing all the symbols after each facet and inserting the Class Number.

Step 8 Verification: Translate the synthesised Class Number and analyse, interpret and verify that the name of the subject arrived at according to the preceding steps is equivalent to the Raw Title of the document thus classified. In case the name of the subject thus arrived at is not equivalent to the Raw Title, it is indicative of the mistake in the occurrence of the process and the same should be rectified.

4 CLASSIFYING WITH UDC

It is evident that the various steps prescribed by Ranganathan suggest certain basic operations. These are:

4.1 UNDERSTANDING THE SUBJECT

The classification work, assuming that scheme of classification is nearly perfect in all respects, requires:

(i) knowledge of the subject, and
(ii) knowledge about the application of the techniques.

While the later is taught in the Library Schools at various levels with varying emphasis on different schemes of document classification but the imparting of former falls within the prerogative of the academic institutions. Thus in actual situations the understanding of the subject matter depends upon the academic background, general understanding of an individual classifier. Lack of understanding of the subject matter and incompetence in application of techniques are of serious consequence and result into wrong classification of documents; consequently access to documents is denied.

A document can be placed at one place but it can be accessed from many angles and the catalogue helps in retrieving and satisfying different approaches. The UDC, because of its internal structure provides for search from many access points. The purpose of classification is to collocate books helpfully i.e. most helpful to most users and the document may be classed and placed under the most sought for subject. The approach of the other access points may be solved with the help of the catalogue by preparing reference entries. The most sought for subject will undoubtedly be the subject matter or specific subject of the document. Classification of documents according to subject approaches of individual users in a general library can result into chaos instead of bringing order in the arrangement of books. Therefore, all subjective approaches should be satisfied with the help of the catalogue and the mechanisms available in the scheme of classification. According to Merril: "Class a book (document) where it will be permanently useful, not where it may serve only a temporary need. And, ". . . . the purpose of classification is not to place the book where it may be looked for but where the matter (contents) in it may be looked for. The author catalog, and to some extent the subject catalog are made for the purpose of finding the book; classification is concerned exclusively with its contents."

The subject of the book can be established by examining: (i) the document; (ii) the qualifications of the author; (iii) the title and its explanatory sub title; (iv) the intent of the author to write the document which is revealed in the overflow pages in case of books and in the abstracts in the case of the articles.

4.2 LOCATING THE SUBJECT

The next stage is to locate the subject in the scheme of classification. Each main class is divided into subclasses, each of these into more subclasses, and so on. It would involve deciding the Basic Class and the chain of subjects forming it. The order of the links in the chain varies and in the case of the UDC alternatives are possible.

In the case of complex subjects more than one main division may have to be used. This can be done in the UDC by using Addition and extension signs; Relation sign and auxiliary of point of view, etc. These have been termed as Phase relations. Certain concepts though forming a link in the chain of the subject represent subordinate ideas recurring in every field of knowledge and thus are commonly associated with many subjects. These have been given in the UDC as common auxiliaries and are given as under:

Common auxiliary of language
Common auxiliary of form
Common auxiliary of place
Common auxiliary of race
Common auxiliary of time

In addition to the common auxiliary given above the UDC provides for the use of special auxiliaries which are applicable to certain subdivisions of the main divisions. Their use has also been explained in the preceding chapters.

4.3 TRANSLATING THE SUBJECT

The specific subject and the class having been decided, it is translated into the notational plane and arranged in a particular order depending on the theoretical foundations of the scheme— The citation order or the facet formula. In the case of the UDC the choice of order depends upon the most helpful order of the documents. The *Guide of the UDC* lays emphasis on users' interest, consistency and helpful order. The principles underlying the decision about the citation order are given in the next section.

5 CITATION ORDER

To decide the position of a subject in a classification scheme it is essential to decide a citation order. The citation order determines the relative position of the subject in the hierarchy of classes that constitute the classification system. The following principles have generally been followed in the UDC.

5.1 SUBJECT FACTORS PRECEDE ALL OTHERS

The term others here means the various forms of presentation of the subject contents of the documents, eg. 'Dictionary of Computer terms' will be arranged as 'Computer Science—Dictionary' and Evaluation of Chemical Abstracts will be arranged as Chemistry—Abstracting Services—Chemical Abstracts—Evaluation.

5.2 CONSENSUS

There are certain subjects which are traditionally studied along certain lines and the users seek information along those lines. Therefore, the citation order should be based on such considerations.

5.3 DECREASING CONCRETENESS

According to this principle, which has been extensively used by Ranganathan in his Colon Classification, more concrete elements are cited before the less concrete ones.

e.g. Medicine—lungs—physiology. However, the problem arises in determining which is more concrete. The same concept time may be less concrete in one subject but may become more concrete in another.

5.4 PURPOSE

Most documents are produced with a purpose in view or the principle of subordinating means to an end. The citation order would be product-operation.

5.5 DEPENDENCE

This is closely related to the concept 'Purpose'. According to this principle if in a compound subject an element y is dependent on another element x, then y is subordinated to x, and the citation order is xy and conversely yx. This may be whole-part relationship, whole-part-property; or whole-part-process or whole-part-process-operation; or operation-agent.

6 STANDARD FACET FORMULA FOR CITATION ORDER

According to the *Guide to the UDC* the following facet formula based on logic, if applied consistently, will yield helpful order. It may be followed unless the particular needs of a collection warrant a different order.

> Wholething—kinds —parts—materials — properties — Processes—Operations—Agents

It is not essential that all the different elements will be available in all the subjects. Some may not be present. The parts, materials may also be divided by kinds.

6.1 ARRANGEMENT WITHIN A GIVEN CLASS

The UDC as a matter of deliberate policy does not impose a strict facet formula in each class. In fact flexibility is one of the important qualities of the UDC. It helps to meet different requirements. However, consistency in classifying in a given class should be maintained.

The subsequent chapters of the book explain the methodology of classifying by locating the basic subject, the links of subjects in the chain constituting the Basic subject and translating the same into symbols.

0 GENERALITIES

1 INTRODUCTION

The class Generalities deals with general aspects of the universe of knowledge as well as some of the specific subjects. It includes subjects like Science and Knowledge, Documentation, Writing, Bibliography, Libraries and Librarianship, Institutions, Documents and general publications. The various divisions and subdivisions of the class 'generalities' have been shown schematically in the next section. The general publications covered include periodicals, newspapers, encyclopaedias, etc, but these have not been covered as 'forms' of material as treated in many other schemes of classification. A general encyclopaedia would be classified under this class, i.e. under 03, but Encyclopaedia of Philosophy would be classed under Philosophy. Similarly general directories, yearbooks, almanacs, etc would be classed under 05. The subsequent section explains with the help of examples the scope of the main division Generalities and the methodology of number-building.

2 SCHEMATIC PRESENTATION CLASSES

0 Generalities →

00 Prolegomena. Fundamentals of Knowledge culture
01 Bibliography. Catalogues.
02 Libraries. Librarianship →
03 Encyclopaedias. Dictionaries. Reference Books.
04 Collections of Essays. Offprints, Reprints Pamphlets, Brochures
05 Periodicals. Reviews
06 Organisations. Associations. Congresses. Museums
07 Newspapers. Journalism

021 Function, value, utility, creation publicity, development, scope, financial upkeep of libraries.
022 Library Site and Premises →
023 Management. Staff
024 Use of the Library. Regulations
025 Library Administration, Methods and Routine
026 Special Libraries
027 General Libraries

022.1 Site
022.2 Building materials. Protection
022 Library site and premises
022.3 Planning in General
022.4 Storage space. Shelvng, Stacks.
022.5 Reading rooms, Rooms for study
022.6 Space for administrative and accessory services. Staff rooms, Cloak rooms, exhibition halls, etc.

08 Polygraphies. Collective Works
09 Manuscripts. Rare and Remarkable Works.

028 Reading. Advice for Readers

022.7 Lighting
022.8 Heating and Ventilation
022.9 Various fixtures and fittings.

3 DETAILS OF THE CLASS

Main class Generalities is subdivided into subclasses, each of these into more and more subclasses. The first division of 00 includes the classes 001 to 009. Works dealing with knowledge in general; Documentation; Syntactics, Semantics, scripts, signs and symbols, etc; Organisation study, methodology, etc; Information, Communication, control theory (cybernetics) including human engineering, etc; civilization, culture; and general works on the humanities are classed under this subdivision. Some of the important subdivisions deal with definition of science and limits of knowledge 001.1; Value and significance of Science 001.3; Scientific theories and hypothesis 001.5; Scientific laws 001.6; Working methods and technique 001.8; Documentation Centres 002.6; Calligraphy 003.3; etc.

The second division 01 is devoted to bibliographies and catalogues and includes the class numbers 011 to 019. Universal and general bibliographies are classed under 011 and special subject bibliographies under 016. Bibligraphies of a specific author and institution under 012 and can be individualised by alphabetical device. Bibliographies of groups of authors of one country are classed under 013. Lists of anonymous or pseudonymous, and separate indexes to works i.e. such works with peculiar characteristics are classified under 014; National bibliographies and those according to the place of publication of works are put under 015. The division 017/019 is devoted to catalogues of libraries and book-trade in general. The alphabetical catalogues by author, title and subject are assigned to the class 018. Dictionary catalogues and other special bibliographies are classed under 019.

Libraries and Librarianship are put under 02 which has divisions 021/028 and deal with various aspects subject such as: Functions, Financing, Legislation under 021; Library site and premises, planning, storing space, stacks, lighting, heating, etc. under 022; Management of Libraries and staff 023; Library rules and regulations and its use 024; Administrative routines, classification, cataloguing, indexing, reference work, etc. 025;

Types of libraries are covered under 026 and 027. Reading and advice for readers is covered under 028.

The division 03 and its subdivisions are used to classify encyclopaedias, dictionaries and reference books. Collections of essays, offprints, reprints, pamphlets, and brochures are assigned to 04.

The division 050 to 059 are the subdivisions of 05. Business and editorial management, are assigned to 050. Almanacs and calendars to 059.

The division 060 to 069 are concerned with organisations, associations, congresses and museums. Included here would be the character, constitution, aim, membership funds, property, executive organs, activities of the Associations, exhibitions. commemorative celebrations; anniversaries, etc. The last subdivision 069, is used for museums, museology and museography.

Newspapers, and journalism, are covered under 07. Some examples of subjects included in this class are ownership and control 070.2; Editorial management 070.4. The divisions 080 i.e. 081 to 088 are used for collected works of individuals; collective works of several authors, series; pictorial matter generally; publications for specific readers, etc.

The last division of this class, 091 to 099, is devoted to manuscripts, Xylographic books, incunabula, and other special types of books.

EXAMPLES

1 Turner, Barry T. Effective technical writing and speaking

Annotation: Discusses the art of editing and writing technical papers, books, etc.

Number Building

Technical writing	003.076
Publishing Manuscripts	:655.51
Class Number	003.076:655.51

2 International Union of Pure and Applied Chemistry (Oxford): List of standards, abbreviations (symbols) of synthetics, polymers and polymer materials

Number building

Symbols and abbreviations	003.62
Semi-synthetic plastics	:678.5
Lists	(083)
Class Number	003.62:678.5 (083)
Alternate	678.5:003.62 (083)

3 Masen, Robert M. Development of cost benefit methodology for scientific and technical information communication and application to information analysis centres

Number Building

Communication	007
Science/technology	:5/6
Costs and costing	:657.47
Class Number	007:5/6:657.47

4 Handbook of comparative steel standards

Number Building

Subject bibliography	016
Standardization	:389.6
Standard specification	(083.7)
Steel	:669.14
Class Number	016:389.6 (083.7):669.14
Alternate	669.14:016:389.6 (083.7)

5 Indian National Scientific Documentation Centre. Catalogue of serials in the Indian Statistical Institute Library

Number Cuilding

Library	017
Serials	:05
Science/technology	:5/6
Bengal (West)	(541.2)
Indian Statistical Institute	ISI

Class Number 017:05:5/6 (541.2) ISI

6 United States of America, Agency for International development. Research literature for development

Annotation: It is library catalogue listing documents useful for researchers in the field of agriculture

Number Building

Catalogue of Public libraries	017.1
Agriculture	:63
Research	.001.5

Class Number 017.1:63.001.5

7 Gabriel, Michael R. and Lad, Dorothy P. microform revolution in libraries.

Annotation: Examines management problems connected with microcopying, microfilming, etc. of the documents

Number Building

Libraries administration	025
General management	025.1
Microforms: microfilms	:778.14

Class Number 025.1:778.14

8 Neelamegham, A. Classified arrangement in technical glossary

Annotation: Discusses the advantages of the classified arrangement in the compilation of glossary of technical terms

Number Building

Libraries and librarianship	02
Classification	025.4
Technical terms	:413.164
Terminology	:001.4

Class Number	025.4:413.164:001.4
Alternate	001.4:025.4:413.164
Alternate	413.164:001.4:625.4

9 Line, Maurice B. Document supply an essential support to science and technology

Annotation: The article by Maurice Line deals with document supply system, reference and information services in the field of science and technology

Number Building

Reference work, information service	025.5
Natural sciences	:5
and Technology	/6
Research	.001.5

Class Number	025.5:5/6.001.5

10 Council of Scientific and Industrial Research. Wealth of India: A dictionary of Indian raw material and industrial product.

Number Building

Dictionaries	030.8
National wealth	:339.3
Products	.002
India	(540)

Class Number	030.8:339.3.002 (540)

11 University Grants Commission and Council of Scientific and Industrial Research (New Delhi): Directory of scientific research in Indian universities

Number Building

Directories	058.7
Science	:5
Scientific research	.001.5
Higher education	[378]

Class Number 058.7:5.001.5 [378]

12 United Nations Educational Scientific and Cultural Organization. World directory of' national science policy-making bodies of Europe

Number Building

Institutions	061
Science/technology	:5/6
Scientific policy	:001.89
Directory	(058.7)
Europe	(4)

Class Number 061:5/6:001.89(058.7)(4)

13 Central Hindi Directorate. Glossary of journalism and printing (English—Hindi)

Number Building

Journalism	07
and Printing	+655
Scientific terminology (Glossary)	:001.4
English	=420
Hindi	=491

Class Number 07+655:001.4=420=491

14 Gibson, Martin L. Editing in computer age

New Delhi LIBRARY

70917

Number Building

Editing	070.4
Manuscripts reading	:655.51
The fifties to eighties (computer age)	"195/198"

Class Number 070.4:655.5"195/198"

EXERCISES

1 Central Hindi Directorate. Comprehensive glossary of technical terms

2 Commission for Scientific and Technical Terminology. Consolidated glossary of administrative terms in Hindi—English

3 International Telecommunication Union (Geneva). Vocabulary of basic terms used in line transmission

4 Lynch, Barbara S and Chapman, Charles F. Writing for communication in science and medicine

5 Vaillecourt, P M. International dictionary of acronyms in library, information and computer sciences

6 Lahood, Charles and Sullivan, Robert C. Reprographic services in libraries, their organization and administration

7 Daily, Jay E. Cataloguing phonorecordings; problems and possibilities

8 Fleischer, Eugene B. Style manual for citing microform and non-print media

9 Atherton, Pauline, *ed.* Classification research: Proceedings of the second international study conference held at Elsinore on 14-18 September 1964

10 Bourne, Charles P. Planning for national research information centre in United Republic of Tanzania

11 Palmer, D M. Sources of information on the European communities

Annotation: Describes the information sources dealing with trade among European communities

12 Directory of trade houses and punch marks, watch makers, jewellers and silver-smiths 1975

13 Meadows, A J. Communication in science

SOLUTIONS

1	001.4:09=914.3
2	001.4:35=914.3
CR	35:001.4=914.3
3	001.4:621.372.4=914.3
CR	621.372.4:001.4=914.3
4	003.076:655.51:5+61
CR	655.51:003.076:5+61
CR	5+61:655.51:003.076
5	02+681.3:003.083
	003.083:02+681.3
6	025.1:778.18
7	025.3:681.84
8	025.3:003.076:778.142
9	025.4:061.3(100) "1964.09.14/.18" (068)
10	025.5:061.66.001.1(678)
11	025.5:341.17(4):382
CR	341.17(4):382.025.5
12	058.7:681.11+671.11
13	007:5/6

1 PHILOSOPHY, METAPHYSICS PSYCHOLOGY, LOGIC, ETHICS AND MORALS

1 SCOPE OF SUBJECTS

The outline of the class shows that this class includes the disciplines of: Philosophy, Psychology, Logic, Ethics and Morals. The two divisions for Psychology in DDC (15, Psychology; 13, Metaphysics of spiritual life, occultism) have been revised but their location has remained in the Philosophy class.

What is Philosophy ? It is really most difficult question to define and even the Philosophers differ on definitions. However, Philosophy is concerned with abstract principles and it remains to be theory of all theories. The various branches of Philosophy have also been changing progressively. In the academic curriculum we generally find metaphysics, epistemology, Logic, Ethics, and aesthetics. The philosophies of the subjects such as Philosophy of science, Political Philosophy, Philosophy of religion are not considered as branches of Philosophy. Such subjects cannot be detached from the domain of philosophy completely and have only to be studied by applying philosophic theories. The disciplines of Logic, ethics and aesthetics have the normative character and fall within the domain of Philosophy.

Mataphysics is subdivided into *Ontology*, the theory of the nature and the types of reality; and *cosmology*, or the general theory of the processes of reality. Various theories of Ontology are: materialism, idealism and dualism. These theories in the UDC have been classed as Philosophical Systems and classed under 141. On the other hand cosmology concerns itself with the manner in which things and events follow upon one another in time. Events and things come together either by chance or brought together by force, motion, etc. Other aspects of metaphysics are: nature of space and time, and relation of mind and body.

Epistemology is a difficult and complex subject and deals with the theory of knowledge.

Logic deals with principles of valid inference and the subject is divided into *deductive* logic and *inductive* logic. The former ensures a certain conclusion whereas the later ensures a probable conclusion.

Ethics confines itself to moral rightness of doing, and does not include technological or prudential rightness or wrongness. It therefore examines various principles for the conviction of rightness or wrongness. Psychology is now an independent discipline. But Psychology has been closely identified with Philosophy, Epistemology, as we have seen, is concerned with what of knowledge and Psychology on the other hand is concerned with how we know.

Psychology is the science of mind or mental phenomenon and activities: Systematic knowledge about mental processes. The detailed subdivisions of the class have been given schematically in the subsequent section.

2 SCHEMATIC PRESENTATION OF CLASSES

1 Philosophy →

11	Metaphysics
122/129	Special Metaphysics
122	Causality
13	Philosophy of mind and Spirits. Metaphysics of Spiritual Life
133	Occultism
14	Philosophical Systems
159.9	Psychology
16	Logic. Theory of Knowledge. Reasoning
17	**Ethics, Morals Convention** →
19	History of Philosophy

171	General Ethics
172	Social Ethics
173	Family Ethics
174	Professional Ethics and Morals, Business Morality
175	Ethics and Recreation
176	Sexual Ethics
177	Ethics and Social Relations
178	Addiction and Temperance
179	**Various Ethical Questions** →

179.1	Morals, Ethics of the Presss
179.2	Cruelty to animals
179.3	Cruelty to Children
179.4	Vivisection
179.5	Swearing Oath
179.6	Heroism, Bravery, Courage, Cowardice
179.7	Respect for human life, suicide
179.8	Human Vices, Faults and failings, Pride, Vanity etc.
179.9	Human virtues and good Qualities, Modesty.

3 DETAILS OF THE CLASS

The first divisions 111 to 119, include general metaphysics, ontology 111, with sections for cosmology, philosophy of nature 113/119. The next division, 122/129, covers special aspects of metaphysics such as causality, Indeterminism, Teleology, The Soul, etc. The division, 13 is concerned with philosophy of mind and spirit. Occultism 133 includes topics as concept and nature of the occult 133.1, supersensual experience 133.2, occult preception 133.3, magic 133.4, Palmistry 133.6, and spiritualism (133.9). Philosophical systems and view points are treated under 140.8 to 141.5. Well known "isms" as Monism, Dualism, Universalism, Energeticism, Evolutionism, Mobilism, Finalism, are all included under this class.

Psychology has been devoted only a division of the number 159.91/159.98. Various aspects such as physiological basis, nervous system, mental development, sex psychology, race psychology, individual psychology, Aptitude, Bio-Psychology sensation, Perception, Psychometry, Emotions, concentration, Induction, Telepathy, mental disorders, Psychoanalysis, Dreams, sleep and Abnormal psychology, etc. have been discussed, under this class.

Logic, Theory of knowledge and reasoing, symbolic logic, Rationalism, Scientific Inquiry, etc. have been assigned to 160.1/168.5.

Ethics, morals is another important subject under 1/199 and is assigned 171/179. General ethics is covered in 171, while 172/179 are used for social ethics, family ethics, professional ethics, ethics and recreation, sexual ethics, ethics and social relations, addiction and temperance, various ethical questions. The History of philosophy is covered by the section 19.

EXAMPLES

1 Nakamura, Hamine. Way of thinking of Eastern people: India, China, Tibet and Japan.

Annotation: Discusses ways of thinking about civilization, and cultural aspects of the Easternpart of the world.

Emphasis has been laid on India, China, Tibet and Japan.

Number Building

Philosophy	1
of mind	13
of civilization	130.2
Eastern Region	(1-11)

Class Number 130.2(1-11)

2 Kneller, George F. Existentialism and Education

Number Building

Philosophy	1
Philosophical systems	14
Kinds of systems	141
Existentialism	.32
Education	:37

Class Number 141.32:37

3 Sidowski, J B. Experimental methods and instrumentation in Psychology.

Number Building

Psychology	159.9
Experimental Psychology	.07

Class Number 159.9.07

4 Chagula, W K and others. Pugwash on self-reliance: Symposia papers.

Number Building

Psychology	159.9
Comparative Psychology	159.923
Sciences	:5
Symposia	(082.2)

Class Number 159.923:5(082.2)

5 Priestly, J B. Man and time

Annotation: Explains the concept of preception in relation to time

Number Building

Psychology	159.9
Sensation, sense perception	159.93
Space, Time	.5
Chronology	:529

Class Number 159.93.5:529

6 Cannon, Walter B. Bodily changes in pain, hunger, fear and rage: An account of recent researches into the functions of the emotional excitement.

Annotation: Deals with scientific researches on bodily pains arising out of the emotions and excitement

Number Building

Psychology	159.9
Emotions	159.942
Bodily pains	:612.88
Scientific researches	:5.001

Class Number 159.942:612.88:5.001

7 Herzberg, Frederick. Motivation to work

Comments: Motivation has not been indicated in the schedule but it is a part of the training of the will. It has been classed accordingly.

Number Building

Psychology	159.9
Will/motivation	159.947
Workers	:658.3-05

Class Number 159.947:658.3-05

8 Harper, R A. Psychoanalysis and Psychotherapy in 36 systems

Number Building

Psychology	159.9
Subconsciousness/unconsciousness	159.964
Psychoanalysis	.2
Psychotherapy	:615.851

Class Number 159.964.2:615.851

9 Garrett, Henry E. IQ and physiographic racial differences

Number Building

Psychology	159.9
Ability testing	159.98
Physiographically	(=1.2)

Class Number 159.98(=1.2)

10 Popper, Karl K. Logic of scientific discovery

Number Building

Philosophy	1
Logic	16
Science and knowledge in general	:001
Scientific research	:5.001

Class Number 16:001:5.001

11 Pyzelecki, Mariam and Wejcicki, Ryszard. *Ed.* Twenty-five years of logical methodology in Poland: 1950-1975

Number Building

Philosophy	1
Logic	16
Methodology	:005
Poland	(438)
1950/75	"1950/1975"

Class Number 16:005(438)"1950/1975"

12 Carrell, L. Symbolic logic and the game of logic

Annotation: The book deals with logic in mathematical puzzles

Number Building

Philosophy	1
Logic	16
Symolic logic	164
Mathematical puzzles	:518.9

Class Number 164:518.9

Alternate 518.9:164

13 Donner, Morton and others. *ed.* Intellectual traditions of the West: Readings in the history of idea.

Number Building

Philosophy	1
Logic	16
Epistemology	165
Intellectualism	.63
West	(1-15)

Class Number 165.63(1-15)

14 Brown, Clearance W and Ghisell, Edwin E. Scientific method in Psychology

Number Building

Philosophy	1
Logic	16
Scientific Inquiry	167
Scientific methods	.2/.3
Psychology	:159.9

Class Number 167.2/.3:159.9

15 Singer, Peter. Expanding circle—Ethics and Sociologism

Number Building	
Philosophy	1
Ethics	17
Social Ethics	172
Sociologism	:301.195
Class Number	172:301.195

EXERCISES

1 Von, Wright. Explanation and understanding.

2 Jammer, Max. Concepts of space; the history of theories of space in physics.

3 Singer, Peter. Expanding circle—ethics and sociologism.

4 Byrne, Donn and Hamilton, Marshall L. Personality research: A book of readings.

5 Beth, Evert W. Aspects of modern logic.

6 Williams, Fredrick. Reasoning with statistics: Simplified examples in communication research.

7 Barbour, Ian G. *Ed.* Western mass and environmental ethics: Attitudes towards science and technology.

8 Russel, B. Wisdom of the West.

9 Richards, Glyn. The philosophy of Gandhi.

10 Chopra, RN. and Chopra, IC. Drug addition with special reference to India.

11 Row, Dorothy. The philosophy of life and death.

12 Goodwin, Geoffrey. Ethics and nuclear deterrence.

SOLUTIONS

1	167
2	114:530.1
3	172:301.195
4	159.923.001

5	160.1
6	162.31
7	17:516 (1-15)
8	19(1-15)
9	19 Gandhi
10	178.8(540)
11	128
12	172.4

2 RELIGION. THEOLOGY

1 SCOPE OF THE SUBJECTS

Religion is one of the important fields of humanities. It is concerned with man's beliefs and practices in relation to God and Gods or the supernatural. Worship and rituals are the outcome of the man's faith in the God. It is defined as 'a set of beliefs concerning the cause, nature and purpose of the universe, especially when considered as the creation of a super human agency or agencies usually involving a devotional and ritual observances and often having a moral code for the conduct of human affairs'. The systematic teachings about the religion, and religious thought, and analysis that treats of God is studied under theology.

The literature of religion consists of its sacred books, its regulations, decrees, exhortations and testimonials. The sacred texts are available in different editions.

Most of the divisions of this class Religion are devoted to the Christianity. The provisions for other religions have been slighted and the class is, therefore, biased in favour of christianity. The schedules, however, provide some options to give a preferred treatment to any religion it may be necessary to emphasize. This preferred treatment is accomplished in the full edition by allowing the classifier to use numbers 23-28.

2 SCHEMATIC PRESENTATION OF CLASSES

2 Religion. Theology →

21 Natural Theology
22 Holy scripture. The Bible
23 Dogmatic Theology
24 The Religious Life. Practical Theology
25 Pastoral Theology
26 The Christian Church in General →
27 General History of the Christian Church
28 Christian churches or Worshiping Bodies
29 Non-Christian Religions and Cults

261 Various Influences and connections of the Church
262 Ecclesiastical government
263 Sunday. Sabbath
264 Liturgy. Public worship. Religious ceremony, services, prayers, books, etc.
265 Sacraments →
266 Home and foreign Christian missions
267 Christian societies, Associations
268 Catechization. Sunday, Schools
269 Retreats. Revivals. Conversions

265.1 Baptism
265.2 Confirmation
265.3 Eucharist. Holy Communion
265.4 Holy orders Ordination
265.5 Marriage
265.6 Penitence, Penance. Contribution, satisfaction, confession, absolution
266.7 Extreme unction viaticum
266.8 Faith cures
266.9 Sacramentals consecration, etc.

3 DETAILS OF THE CLASS

The division 21, is used for Natural Theology and 211 to 219 are concerned with Deism, Theism, Pantheism, creation, providence, Good and evil, Man's duty towards God, the future life, and Analogies. Christian religion and its various aspects are covered under the class 22/28. Divisions 221 to 229 cover the Old Testament, New Testament and Detero canonical books, respectively. The holy scripture Bible: its origional texts, commentaries, other special aspects have been covered under 22.01/22.09.

Dogmatic and practical theology have been covered under 23 and 24 which include various aspects like God, Christology, man, Doctrine of salvation, Angles, Eschatology and Moral Theology, Meditations, prayers, religious reading matter furnishing and decoration of churches, personal religious life, family or domestic workship etc.

The divisions 251/259 are devoted Homiletics, Sermons, Christian churches and christaian religious orders. Matters relating to pastoral visiting, obligations of priests and ministers, Brotherhoods and lay societies created for parish work are also detailed within these sections. The classes 261/269 are concerned with christian social and Ecclesiastical government. Some important subdivisions provide for public worship sacraments, Christian societies and associations, Christian missions.

General history of the Christian church is covered by 27. The division 271/276 are devoted to Religious orders, religious persecutions Heresies and schisms.

Christian churches are classed under 281/289. The first division 281 deals with Primitive and Eastern Churches, 282 deals with Western and Roman Churches, 283 deals with Episcopal National Churches, 284 with continental Protestant Churches, and divisions 285 to 289 deal with numerous protestant denominations.

The section 29 is used for non-christian religions and cults. Here are classed comparative history of religions, ancient Greek and Roman Religions, Early Germanic Scandinavian and Baltic-slav (wend) Religions, Buddhism and similar Religions, Jewish, Islam and various European (non-christian) Cults.

Finally 299.1 to 299.99 is used for other religions found in the Far East and Africa, etc.

EXAMPLES

1 Indian Institute of Advanced study (Simla). Religion and society : Transactions

Number Building

Religion	2
Sociology/Society	:301
Symposia, Transactions	(082.2)

Class Number 2:301 (082.2)

2 Banerjee, JN. Religion in art and archeology

Number Building

Religion	2
Arts	:7
and Archeology	+930.26

Class Number 2:7+930.26

3 Biranchi, V. *ed.* Problems and methods of the history of religion: Papers and discussions.

Number Building

Religion	2
History	(09)
Seminar papers	(082.2)

Class Number 2 (09)(082.2)

4 Atkinson, Edwin T. Religion in the Himalayas

Number Building

Religion	2
Himalayas	(235.24)

Class Number 2(235.24)

5 John, Mathew P. Christianity

Number Building	
Religion	2
Christianity	22/28
Class Number	22/28

6 Lecky, W E H. History of the rise and influence of the spirit of rationalism in religion in Europe

Number Building	
Religion	2
History	(09)
Europe	(4)
Rationalism	:165.64
Class Number	2(09)(4):165.64

7 Walker, T. Acts of the Apostles

Number Building	
Religion	2
Holy scriptures	22
Acts of Apostles	6
Class Number	226

8 James, EO. Gods: History and discussion of religions in the near-east and eastern mediterranean

Number Building	
Religion	2
Dogmatic theology	23
God	231
Eastern Mediterranean	(4-011)
History	(09)
Class Number	231(4—011) (09)

9 Bangert, William A. History of the society of Jesus

Number Building

Religion	2
History of Christian church	27
Society of Jesus	1.5
Class Number	271.5

10 Bhattacharya, Dakshina Ranjan. Origin and development of ancestor worship in India

Number Building

Religion	2
Non-christian religions	29
Comparative history of Religions	291
Ancestor worship	.213
India	(540)
Class Number	291.213 (540)

11 Rose, H J. Handbook of Greek mythology including its extension to Rome

Number Building

Religion	2
Non-christian religions	29
Greek and Roman religion	2
Greek and Roman Mythology	.1/.2
Class Number	292.1/.2

12 Kingsway, F. and Phillips. G E. Hymns of the Tamil saivete Saints

Number Building

Religion	2
Non-Christian religions	29
Buddhism and similar religions	4
Vedism	.11
Scriptures	.118
	(subdivision of 291 have been applied)
Religious hymns	:264-17

Class Number 294.118:264-17

13 Chattopadhyaya, Debi Prasad. *ed.* History of Buddhism in India

Number Building

Religion	2
Buddhism and similar religions	94.3
India	(540)
Historical presentation	(091)

Class Number 294.3(540) (091)

14 Devendra, D T. Buddha's image in Ceylon

Number Building

Religion	2
Non-Christian religions	29
Buddhism and similar religions	94
Buddhism	.3
Ceylon (Sri Lanka)	(548.7)

Class Number 294.3(548.7)

15 Fischer, Klaus. Caves and temples of the Jains

Number Building

Religion	2
Non-christian religions	29
Buddhism and similar religions	4
Jainism (subdividing as 291)	.35
Temples	.353.5
Caves (India)	(24:540)

Class Number 294.353.5(24:540)

16 Ganda Singh. Selected bibliography of the Sikhs and Sikhism

Number Building

Religion	2
Non-Christian religions	29
Buddhism and similar religions	294
Neo-Hinduism	.51
Bibliography	:016

Class Number 294.51:016

Alternate 016:294.51

17 Chaudhuri, Nirad C. Hinduism: A religion to live by

Number Building

Religion	2
Non-christian religions	29
Hinduism	4.51

Class Number 294.51

18 Central Council for Research in Indian Medicine and Homeopathy. Seminar on yoga

Number Building

Religion	2
Yoga	297.527

Exercises	:613.7
Seminar papers	(082.2)

Class Number 294.527:613.7(082.2)

19 Rizwi, S M. A brief survey of Zorastrian religion in the light of Quranic teachings

Number Building

Religion	2
Non-Christian religions	29
Zoroastrianism	295
Early Zoroastrianism	.4
Koran	:297.18

Class Number 295.4:297.18

20 Fischer, Michael M. Iran: From religious dispute to resolution

Number Building

Religion	2
Non-christian religions	29
Islam	297
Political science	:32
Revolution	:323.27
Iran	(55)

Class Number 297:323(55)

EXERCISES

1 Levine, Daniel H. Religion and politics in Latin America: The catholic church in Venezuela and Columbia.

2 Abraham, J. The divine inspiration of holy scripture

3 Epstein, B. Judaism—A historical presentation.

4 Arberry, A J. Aspects of Islamic civilization: As depicted in the original texts.

5 Gromacki, Robert Glen. New Testament survey.

6 Rooth, Anne Birgitta. Loki in Scandinavian mythology

7 Thomas, J. Imitation of Christ

8 Renan, Ernest. The life of Jesus.

9 Masero, Juan. Lamps of Fire; from the scriptures and wisdom of the world.

10 Sunder Lal: Gita and the Quran.

11 Mohammad Amin. Pilgirmage to Mecca.

12 Gerhard, Schoenberuer. The yellow star: Persecution of Jews in Europe, 1933-1945.

13 Bensen, P H. Religion in contemporary culture: A study of religion through social sciences.

14 Heschel, Arraham Joshua. Man is not alone: A philosophy of religion.

15 Muller, Herbert J. Religion and freedom in the modern world.

16 Murray, Robert. Brief history of the church of Sweden: Origins and modern structures.

17 Atreya, B L. Yoga and modern thought or agreement of the East and West on the fundamental problems.

18 Michael, A. Radhakrishnan on Hindu moral life and action.

:SOULTIONS

1	2:32 (8=6)
2	22.012
3	296(091)
4	297:008
5	225
6	293
7	242
8	232.9
9	291.8
10	291.8

11	297.16Mecca
12	296“1933/1945”
13	2:3
14	21
15	211
16	27(485)
17	294.527
18	294.51:171

3 SOCIAL SCIENCES

1 SCOPE OF THE SUBJECTS

The Social Sciences as sciences are younger than the biological or physical sciences. This group is quite different from the physical or biological science in so far as the application of various tests for their being science are concerned. The social sciences deal with group activities and achievements. The inclusion of various subjects under its umberalla is influenced by many factors such as the curricula of the universities, the decisions of different social science organisations with regard to the spectrum of the subjects covered by them, etc. The core subjects included are: Economics (Political Economy), Political Science (Government, Politics), Psychology (in part i.e. social aspects only), Social Anthropology or Ethnology (Folklore, Culture, etc.), History, Education, Law, Statistics (methods), Sociology, Social Work and Demography. History is now being included in another broader group known as historical sciences because of the develypments in the subject.

The scope of the individual subjects and the details of the class have been discussed in the subsequent sections.

The class 3 in the UDC includes Sociology, Statistics, Political Science, Economics, Law, Public Administration, Social

Welfare, Education, Commerce and Social Anthropology as the core subjects under the main divisions of 3. Psychology has been covered under 159.9. History and Geography under the class 9. Demography, International Relations claim to be considered as independent disciplines have been provided subordinate place under 31 and 32 respectively. Military Science and Defence have also been included in the class 3. The details have been indicated schematically in the next section.

2 SCHEMATIC PRESENTATION OF CLASSES

- 3 **Social Sciences** →
  - 30 Sociology. Sociography
  - 31 Statistics.
  - **32 Political Science, Politics, current affairs** →
    - 321 **The state and Society, Regimes** →
      - 321.1 Family: Patriarchy, matriarchy
      - 321.2 Horde, tribe, clan, etc. chieftainship
      - 321.3 Feudalism
      - 321.4 Ancient, early primitive democracy
      - 321.5 Oligarchy, Theocracy, Aristocracy, Plutocracy
      - 321.6 Authoritarian, "totalitarian" regimes
      - 321.7 Parliamentary, modern democracy
    - 322 The State and the churches
    - 323 Internal politics.
    - 324 Elections.
    - 325 Migration, Colonization Colonial policy
    - 326 Slavery, Serfdom
    - 327 International, Foreign Affairs
    - 328 Parliaments, Legislative Assemblies
    - 329 Political Parties Party system
  - 33 Economics
  - 34 Jurisprudence, Law, Legislation
  - 35 Public Administration Military Science Defence
  - 36 Social Relief and welfare. Insurance
  - 37 Education
  - 38 Commerce. Trade Communications and Transport
  - 39 Ethnography, Custom and Tradition. Folklore, Social Anthropology

3. DETAILS OF THE CLASS

Sociology is the science which studies the origin, development, organisation and the functions of the human society. It deals with social institutions, social relations. social processes. All these aspects have been covered under the class 301 and its subdivisions. Social reforms and such other social questions have been broadly grouped under 304. Social geography and sociography under 308.

The division 31 is devoted to Statistics. Actually 31 deals with data and numerical facts which is statistics. The statistical methods deal with the collection, classification, analysis and interpolation of numerical facts. These have been included under the division 311. The theoretical and mathematical aspects have been classed under mathematics i.e. 51. Demography—the science of vital and social statistics, as of births, deaths, i.e. statistics of morbidity, marriage, etc. have been included under 312 and 313. The places 314/319 have been kept vacant.

The next division 32 is used for Political Science—the science of politics or of the principles and conduct of Government. It is, therefore, concerned with the description and analysis of political institutions especially governmental institutions and processes. Various aspects covered under 321/329 are therefore: The State and Society 321; the state and the churches 322; Internal Politics, political action—unrest, revolt, civil war, party loyalty, etc. under 323; Elections 324; Immigration, Emigration, colonization, refugees and repatriation of emigrants under 325; Slavery and its abolition 326: Foreign affairs, International relations 327, Parliament, Cabinet formation and resignation under 328. The Party system, political parties in different countries and the party organisation are all covered under 329.

The division 33 is used for Political Economy or Economics. The term political economy was used for Economics during 17th and 18th century. It deals with political policies and economic processes and their interrelations and concerned itself with the art of management of communities especially as affecting the wealth of the Government. Economics is now considered as a science which deals with principles, laws, systems that affect the production, distribution and consumption of goods and services, or the material welfare of the mankind. General principles and systems have been covered under 330.1. Labour, industrial relations, wages, categories of labour, employment and unemployment in general and of the skilled and qualified worker, conditions of work are all classed under the subdivisions of 331. Finance has been divided as private finance and public finance. Banking, Loan institutions and private loan, Exchange and currency, interest and credit, as part of the private finance have been included under 332. The public finance or state finance includes. Budgets, Fiscal measures, taxation, public debts and public loans. It has been covered under 336. The real estate i.e. land and property whether private or public has been covered under 333. The division 334 is devoted to cooperative movement. The socialist movements including Pre-Marxist, Marxism, etc. have all been covered under 335. Free trade, protection, import and export duties, trade agreement are classed under 337. Another major aspect is the production or creation of wealth and economic situation within a country. These subjects are classed under 338. The various aspects covered are: Forms of production, Price and value, organisation of production, factors of production and the form of economy including economic planning and control. The subdivision 339 deals with distribution, consumption and conservation of wealth or goods and includes various aspects as prosperity, poverty, national income, and controlled distribution systems, etc.

Jurisprudence, Law in general, Legislation and internal law have been provided the division 34. The subject of law deals with principles and regulations established by a government and applicable to a people whether in the form of legislation or of customs and policies recognised and enforced by judicial decision. To study law is jurisprudence. Various kinds and forms of law such as Natural law, Statute Law are classed under 340.1, International law under 341. Public law and the Constitutional law including subjects as Power of Parliament, Human rights, Citizenship, Electoral law are covered under 342. Criminal law and Penal offences have been provided two places: 343 and 344. The division 343 covers the application in general and that for the special classes such as military is covered under 344. The private law including Tort, Family law being classed under 347.1/.6; the commercial law under 347.7; the procedural aspects and courts under 347.9. The ecclesiastical and Economical law under 348. The class 349 having been kept vacant.

The division 35 is assigned to Public Administration, Military science and Defence. The Civil Services, Government legislation with regard to sources of revenue for public properties etc. are included in 351. The administration at different levels—local, regional/state and control is covered under 352/354.

The Military Art and Science which does not belong to this division has, however, been provided under the subdivisions 355. Various aspects included under 355/355.8 are History and the art of War, Army/navy life, recruitments, training, mobilization and general organisation of the Forces, operations of War, military administration. The Fighting Services—Army, (Infantry, Cavalry, Signals), Air force and Navy have all been classed under 356/359.

Social relief, and welfare have been provided the division 36. Insurance is considered to be part of Social relief and welfare activity. This division includes aspects such as: Charity; relief or aid in earthquakes, floods, war, epidemic etc.; Welfare activities—medical, help to destitutes and aged, youth welfare, Social work. Movement for Social reform are covered under 363/367. Youth movement, patriotic and similar movements are, however, classed under 369. Insurance of life, things—real estate, transport, social, agricultural, etc. are classed under 368.

Another important discipline covered under Social Sciences is Education. It has been provided the place 37. It deals with Training, instruction or imparting or acquiring of knowledge, skills—general, special and professional and developing the powers of reasoning and judgement. The process can be carried at different levels, and ways—formal/non-formal at School, college and university level. Teaching, School organisation and educational systems are classed under 371. Education at different levels eg. demenstary, secondary and University are classed under (372), (373) and (378) respectively. Continuing Education, adult education under 374, other organisational matter e.g. relation between school and public authorities.

under 379. The classes 375, 376 and 377 have been left vacant.

Commerce, trade and communications are classed under 38. This division includes inland (home) trade, foreign or international trade. Communication and transport have been provided under the division 383/388. Standardization and metrology have been placed under 389. The class 39 includes social anthropology, Customs, Manners, Folklore, etc.

EXAMPLES

1 Institute of Human Relations (London). Social research and a national policy for science

Number Building

Social Sciences	3
Research	.001.5
Science	:5
Policy	.001.1

Class Number 3.001.5:5.001.1

2 Central Statistical Organisation. Basic statistics relating to Indian economy (1937 to 1973)

Number Building

Statistics	31
Economics	:330
National economy	.191.5
India	(540)
During 1937-73	"1937/1973"

Class Number 31:330.191.5(540)"1937/1973".

3 India, Ministry of Finance. Statistical outline of India.

Number Building

Statistics	31
India	31(540)

Year Book	(058)
For the year 1982	“1982”

Class Number 31(540)(058)“1982”

According to the internal order of auxiliaries, suggested by UDC, the class No should be 31(540)“1982”(058). But from the synthesis of the facets the ordering of auxiliaries given above is to be preferred.

4 Codaran, William G. Sampling techniques.

Comments The class number has been arrived by using depth schedule.

Number Building

Social Sciences	3
Statistical Sciences	311
Sampling techniques	.213.2

Class Number 311.213.2

5 Mudd, Stuart. *ed.* Population crises and the use of world resources

Number Building

Statistics	31
Demography	312
Population crises:increase, decrease, density, etc.	.8/.9
Consideration of wealth or goods	:339
Natural resources	.5

Class Number 312.8/.9:339.5

6 Polsby, Nelson W and Wildavsky, Aron. Presidential elections, strategies of American electoral politics.

Number Building

Political Science	32

Elections	324
United States of America	(73)
President	:328.132.7

Class Number 324(73):328.132.7

Alternate 328.132.7:324(73)

7 Sareen, Tilak Raj. Russian revolution and India: A study of Soviet policy towards Indian national movement 1922-29

Number Building

Political Science	32
International affairs	327
Russia	(47)
National Movement	:323.1
India	(540)
during 1922-29	"1922/29"

Class Number 327(47):323.1(540)"1922/29"

8 Johnson, J D. Econometric methods.

Number Building

Economics	33
Econometry	330.115

Class Number 330.115

9 Indian Investment Centre (New Delhi). Seminar on world partnership in the second development decade (1970-1979) held on 3.12.71

Number Building

Economics	33
Economic policy	330.19
During 1970-1979 decade	"197"
Mutual assistance (partnership)	:341.232
Seminar paper	(082.2)

Class Number 330.19"197":341.232(082.2)

10 Organisation for Economic Co-operation and Development (Paris): Manpower statistics 1950-62

Number Building

Economics	33
Labour	331
Manpower	.024
Statistical data	(083.4)
for 1950-1962	"1950/62"

Class Number 331.024(083.4)"1950/62"

11 Tinbergen, Jan and Boss, H C. Econometric models of Education: Some applications

Number Building

Economics	33
Labour	331
Selection of workers	.115
Use of models	.001.57
Educational systems	:371

Class Number 331.115.001.57:371

12 Sinha, S L.N. *ed.* Aspects of gold policy: Conference papers

Number Building

Economics	33
Private finance	332
Gold standard	.577
Gov't measures	(094.5)
Conference proceedings	:C61. 3

Class Number 332.577(094.5):061.3

13 Vedavali, R. Private foreign investment and economic development: A case study of petroleum in India

Number Building

Economics	33
Private Finance	332
Financial market	.6
Capital investment	.67
Foreign	(1-87)
Petroleum	:665.5
India	(540)

Class Number 332.67(1-87):665.5(540)

14 Sonachalam, K S. Land reform in Tamil Nadu: Evaluation of implementation

Number Building

Economics	33
Land property	333
Land reforms	.013.6
Madras (Presidency)	(548.1)

Class Number 333.013.6(548.1)

15 Shastri, K S. Performance budgeting for planned development

Number Building

Economics	33
Public finance	336
Budget	.12
Performance budget	PB
National plans	:338.984.3

Class Number 336.12PB:338.984.3

16 Directorate of Publications (New Delhi). Central excise tariff: Working schedule as on 15.5.1981

Number Building

Economics	33
Public finance	336
Taxes	.2
Excise duty	.222
Tariffs	.003.13
India	(540)
on 15 May 1981	"1981.05.15"
Class Number	336.222.003.13(540)"1981.05.15"

17 Tariff Commission. Report on the continuance of protection to the Aluminium industry

Number Building

Economics	33
Protection	337
Tariff in general	.026.5
Aluminium industry	:669.71
India	(540)
Class Number	337.026.5:669.71(540)

18 India, Ministry of Law, Justice, and Company Affairs. Monopolies and restrictive trade practices Acts: Rules and regulations

Number Building

Economics	33
Production	338
Monopolies	.8
Act	(094.5)
Class Number	338.8(094.5)

19 United Nations Industrial Development Organization (Vienna). Appropriate industrial technology for basic industries

Number Building

Economics	33
Production	338
Industrial production	.45
Engineering and Technology	:62/69
Research and development	.001.5/.6
Class Number	338.45:62/69.001.5/.6

20 Bhattachary, S N. Development of industrially backward area—the Indian style

Number Building

Economics	33
Production	338
Industrialization	.924
Undeveloped area	(1-77)
Rural Economy	:338.922
India	(540)
Class Number	338.924(1-77):338.922(540)

21 Planning Commission (New Delhi). Report of the working group on Electronics industry. *Electronics information and Planning*: 6,1; Oct., 1978.

Number Building

Economics	33
Production	338
Economic Planning and control	.98
India	(540)
Electronics	:621.38
Class Number	338.98(540):621.38

22 Mal, D K. Distribution of income and wealth in India during Five year plans

Number Building

Economics	33
Production	338
Economic development plans	.984
National five year plans	.3
Distribution of income/wealth	:339.2/.3

Class Number 338.984.3:339.2/.3

23 Sebastian, Stanislans. Soviet economic aid to India: An analysis and evaluation

Number Building

Law	34
International law	341
Mutual assistance, Economic aid	.232.3
Russia	(47)
Economic Policy	.330.19
India	(540)

Class Number 341.232.3(47):330.19(540)

24 WIPO. Budapest treaty on International recognization of the deposit of microorganisms.

Annotation The treaty discusses the details of the microorganism being deposited as patents in the International level.

Number Building

Law	34
Civil law	47
Company law	.7
Patents	71
Microbiology	:576.8
Rules regulations	(094.7)

Class Number 347.771:576.8(094.7)

25 Administrative Reforms Commission (New Delhi). Report of the study team on railways

Number Building

Public administration	35
Public services	351
Railways	.812
Report	(047)

Class Number 351.812(047)

Alternate 35.075.2:351.812(047)

26 United Nations Educational, Scientific and Cultural Organization. Manpower aspects of educational planning: Problem for future.

Number Building

Education	37
Programmes	.001.1
Labour	:331
Manpower	.024

Class Number 37.001.1:331.024

27 Defence Documentation Centre, Virginia. Use of computers in education: A bibliography

Number Building

Education	37
Computers	:681.3
Use	.004
Bibliography	:016

Class Number 37:681.3.004:016

28 United Nations Educational, Scientific and Cultural Organization. Comparative study of secondary school building costs

Number Building

Education	37
Secondary education	373
Schools	.5
Buildings	:727.1
Costs	.003.12
Report	(047)

Class Number 373.5:727.1.003.12(047)

Alternate 727.1.003.12:373.5(047)

29 National Council of Applied Economics Research (New Delhi). Demand for steel castings

Number Building

Commerce	380
Supply and demand	.11
Steel	:669.14
Castings	:621.746

Class Number 380.11:669.14:621.746

30 Suri, H R. *ed.* Indian export yearbook. 1981/82

Number Building

Commerce	38
Foreign trade	382
Export	.6
Yearbooks	(058)
for the years 1981/82	"1981/82"

Class Number 382.6(058)"1981/82"

31 India, Ministry of Commerce and Industry. Training in metric system for engineering industry

Number Building

Commerce	380
Metrology	389
Metric system	.151
Engineering	:62
Manufacture point of view	.002.2

Class Number 389.151:62.002.2

EXERCISES

1 India, Ministry of Industries. Guidelines for industries 1981: Policy and procedures

2 India, Ministry of Industries. Supplement to guidelines for industries 1981: Policy and procedures—Scope and encouragement

3 National Council of Applied Economic Research (New Delhi). Development without aid

4 Organization for Economic Co-operation and Development (Paris). Resources for the developing world

5 India, Ministry of Labour and Employment, Labour Bureau. Report on family living: Survey among industrial workers in Assam 1958-59

6 Mitra, Asok. Implications of declining sex ratio in Indian population: Programme of women studies

7 Wolstenholme, G E W and Cornor, M. *ed.* Immigration; medical and social aspects

8 Samir, Amni. Accumulation on a world scale: A critique of the theory of underdevelopment

9 Gaikwad, V R and Tripathy, R N. Socio-Psychological factors influencing industrial entrepreneurship: A case study of rural areas of the Western India

10 Rao, V K R V. Education and human resource development

11 Kothari, H. *ed.* Technological education

12 Mandess, C R S. Soviet technological curricula

13 Shah, A B. *ed.* Education, scientific policy and developing countries. (Primarily lays emphasis on India)

14 Boning, E. and Boeloffs, K. Case studies on innovation in higher education: Three German Universities

15 National Council of Educational Research and Training (New Delhi). Report of the study group on supervision and inspection

16 Federation of Indian chamber of Commerce and Industry (New Delhi). Seminar on import substitution

17 Grant, Eugene L and Leaven-worth, Richard S. Statistical quality control

18 Monton, Karl. Standardization and the handicapped

19 Bhattacharya, S N. Rural industrialisation in India: Its nature and problems

20 Clet, Viceh. Fire related codes, law and ordinances

21 United States of America, National Bureau of Standards. Creative partnership: Government and the professional services.

22 International Trade Centre UNCTAD/GATT (Geneva). Canned fruits and vegetables trade: France

23 Lowenstien, Haud Zuhlsdroff, V. NATO and the defence of the west

24 Muthuswamy, P. Income tax and pay bills

25 Ghosh, S K and Sridhar, E. *ed.* Chinas nuclear and political strategy

26 Batty, Edward W. Scientific technological education and cancer

SOLUTIONS

1 338.98(540)"1981"(094.7)

2 338.98(540)"1981"(094.7)

3 330.191.5:341.232(540)
4 330.191.6(1-77):341.232
5 331.83:338.585.3(541.1)(047)
6 312.8:3-055(540)
7 325.1:614.1.009(082.2)
8 330.14/.19(1-77)
9 301.151:338.96(547-202)
Alternate 301.151:338.93(547-202)
10 37.003.1:331.024
11 371:378.962
12 371.214:373.6(47)
Alternate 371.214:378.962(47)
13 378:5/6.001.8(540-77)
14 378.001.7(430.1)
15 379.15.008.2(047)
16 382.5.002.69(082.2)
17 311:658.56
18 3-056:389.6:381.6
19 338.45(540-202)
20 351.785:614.84:699.81(094.7)
21 354:658.3-057(73)
Alternate 354(73):658.3-057
22 38:338.7:664.83/.86(44)
23 355.43(1-15):341.232.1
24 354.087:336.215
25 355.02:623.454.8(510)
26 378.962+371.048(540)

4 PHILOLOGY. LINGUISTICS. LANGUAGES

1 SCOPE OF THE CLASS

The class 4 is used for all forms of verbal expression and use of words in human thought. It is devoted to individual languages and their science. The individual languages have been assigned to 42/49 whereas the philosophy of the language, origin and linguistics have been assigned to the classes 401/419. The three different aspects covered under the division 4 are Languages, Linguistics and Philology. The language as is commonly understood is a body of words and systems used to communicate intelligibly with one another. It is generally communication by voice which makes use of certain auditory symbols in conversation and these carry conventional meanings. The language of the deaf and the mute, the animals, etc being different from the one used by individuals in any nation or any geographical area. The study of the written records, their authenticity, the original form and their meanings, etc are all studied under philology and this is sometimes termed as linguistics. However linguistics is a science of language including phonetics, phonology, morphology and syntax. Linguistics is often divided into historical and descriptive linguistics.

In the UDC, the linguistics has been transferred under class 8 alongside literature i.e. 8.07 where it is affixable to specific language numbers 82/89 eg. Russian philology, linguistics 882.07. The class 4 was actually freed by the decision of CCC of 23 September 1962.

The schematic presentation after class 'Philology, Luiguistics and Languages' is given on the next page.

2 SCHEMATIC PRESENTATION OF THE CLASSES

- 4 **Philology. Linguistics. Languages** →
  - 40 General Questions
  - 41 General philology and linguistics
  - 42 Western Languages in General
  - 420 English
  - 43 Germanic Languages
  - 430 German
  - 40 French
  - 450 Italian
  - 460 Spanish
  - 47 Classical languages
  - 48 Slavonic and Baltic Languages
  - 49 **Oriental, African and other Languages** →
    - **491 Various Indo-European (Aryan, Indo-Germanic), Languages** →
      - 491.0 Indo-European or Aryan languages in general
      - 491.1 Indic group in general
      - 491.2 Ancient Indic Sanskrit
      - 491.3 Mediaeval Indic. Pali
      - 491.4 Modern Indic: Punjabi, Bihari, Gujarati, etc.
      - 491.5 Iranian Languages, Persian, etc.
      - 491.6 Celtic (and Basque)
    - 492 Semitic Languages
    - 493 Hamitic Languages
    - 494 .1/.5 Uralo-Altaic or Tuzanian languages
    - 494.6 Caucasian languages
    - 494.8 Dravidian languages
    - 495 Mongolian and other Asiatic language
    - 496 African languages
    - 497 North and Central American Indian
    - 498 South American Indian Languages
    - 499 Austronesian and Australian Languages

3 DETAILS OF THE CLASS

The divisions 40 and 41 are devoted general questions and general philology. Philosophy of language and origin and development, history have been assigned to 401 whereas various kinds of languages and dialects to 408. Special means of thought communication such as sign languages, mime, gestures, etc. have all been devoted to 409. The Class 41 deals with general philology and linguistics. It includes orthography, parts of speech, lexicography, phonetics, grammar-philosophic and historical aspects, metrics, criticism and the study of sources of philology. The division 42/49 have been assigned to the specific languages. The details of which have already been indicated in the earlier section i.e. Schematic presentation of the class.

EXAMPLES

1 Ingram, David. Procedures for phonological analysis of children language

Number Building

Languages, Linguistics, etc. 4		
Children	:3-053.2	
Phonetics		:414
Class Number	4:3-053.2:414	

2 Jesperson, Otto. Language: Its nature, development and origin

Number Building

Philology, Linguistics, Languages		4
Origin and development of language		401
Class Number	401	

3 Lehmann, W P and Maikiel Yakoo. *ed.* Directions for historical linguistics: A symposium

Number Building

Languages, Linguistics, etc.	4
Origin and development	401
Symposium proceedings	(082.2)

Class Number 401(082.2)

4 Levelt, W J M and Arcis, G B. Studies in the perception of language

Number Building

Linguistics	41
Psychology	:159.9
Perception	.937

Class Number 41:159.937

5 Chao, Yenren. Linguistic and symbolic system

Number Building

Linguistics	41
Symbolic logic	:164

Class Number 41:164

6 Schultz, Noel W. On the autonomy and comparability of linguistics and ethnographic description

Number Building

Linguistics	41
Ethnography	:391/397

Class Number 41:391/397

7 Wim Zonneveld and Fred Weerman. *ed.* Linguistics in Netherlands: 1977-1979

Number Building

Linguistics	41
Netherlands	(492)
during 1977-1979	“1977/1979”

Class Number 41(492)“1977/1979”

8 Neelameghan, A. Classified arrangement in technical glossary

Number Building

General Philology and Linguistics	41
Lexicography	413
Technical terms	.164
Arrangement	:415.6
Classified	:025.4

Class Number: 413.164:415.6:025.4

9 Gruber, Jeffrey S. Lexical structures in syntax and semantics

Number Building

Linguistics	41
Lexicography	413
Grammar	:415
Semantics/syntax	.4/.6

Class Number 413:415.4/.6

10 Devito, Joseph A. Articulation and voice: Effective communication

Number Building

Linguistics	41
Phonetics	414

Class Number 414

11 Allen, W S. Phonetics in ancient Indi

Number Building

Philology and Linguistics	41
Phonetics	414
India	(540)
Ancient	“—”

Class Number 414(540)“—”

12 Vandi, J K and Teun A. Some aspects of text grammars.

Number Building

Linguistics	41
Grammar	415

Class Number 415

13 Schwarz, David S. The semantics and pragmatics of singular terms

Number Building

Linguistics	41
Grammar	415
Semantics	.4

Class Number 415.4

14 Gerdc Haan. Conditions on rules: The proper balance between syntax and semantics.

Number Building

Linguistics	41
Grammar	415
Semantics	.4
Syntax	/.6

Class Number 415.4/.6

15 Wolck, Wolfgang and Methews, P H. Preliminary classification of adverbs in English

Number Building

English language	420
Parts of speech	-2
Class Number	420-2

16 Raghuvira. Elementry English—Hindi dictionary of scientific terms

Number Building

Western Languages	42
English	420
Dictionary	(038)
Hindi	=491.43
Science & Technology	:5/6
Class Number	420(038)=491.43:5/6
Alternate Number	420=491.43(038):5/6

17 Nihalani, Paroo and Hosali, Priya. Indian and British English: A handbook of usage and pronunciation

Number Building

English language	420
Pronunciation	:411
British & Indian	(42+540)
Class Number	420:411(42+540)
Alternate	420-1(42+540)

18 Grave, Graham. English for scientists

Number Building

English Language	420
For scientists	:5.007
Class Number	420:5.007

19 Robert, A. Statistical linguistic analysis of American English

Number Building

English Language	420
American	(73)
Statistics	:31

Class Number 420(73):31

20 Bahnick, Karen. Value of morphological criteria for delimiting stages in the historical development of Germanic languages

Number Building

Germanic languages	43
Origin & development	-01
Grammar	:415
Morphology	.5

Class Number 43-01:415.5

21 Fotos, J T and Bray, J L. German grammar for chemists and other science students

Number Building

German Language	430
Grammar	-05
For scientists	:5.007

Class Number 430-5:5.007

Alternate Number 430:415:500.7

22 Mansion, J E. Harrop's new standard French and English dictionary

Number Building

French Language	440
Dictionary	(038)
English Language	=420

Class Number 440(038)=420
Alternate Number 440=420(038)

23 Certner, Michael H. Morphology of modern French

Number Building

French Language	440
Grammar	-5
Morphology	-55

Class Number 440-55

24 Kellenberger, Hunter. Influence of accentuation on French word order

Number Building

French Language	440
Grammar	-5
Word order	-56

Class Number 440-56

25 Watterson, Barbra Introducing Egyptian Hicroglyphs

Number Building

Oriental, African and other Languages	49
Indo-European Languages	491
Ancient India	.3
Sign languages	-091

Class Number 491.3-091

Alternate Number 491.3:409.1

26 Rang, Behari Lal. Hindi self-taught through English

Number Building

Languages, Linguistics	4

Oriental, African and other Languages	49
Hindi	491.43
Teaching and study	-07
English	:420
Class Number	491.43-07:420
Alternate Number	491.43:407:420

27 Sobeiman, Harvey, *ed.* Arabic dialect studies: A selected bibliography

Number Building

Oriental, African and other Languages	49
Semitic language	492
Arabic	.7
Dialect	-087
Bibliography	:016
Class Number	492.7-087:016
Alternate Number	016:492.7-087

28 Journal of African Languages and Linguistics

Number Building

Language. Linguistics, etc.	4
African	496
Journal	(05)
Class Number	496(05)

EXERCISES

1 Fowler, H W. A dictionary of modern English usage

2 Shaikh, Shali. A course in spoken Arabic

3 Pijnenburg W and de Tollenare F. Proceedings of the second international round table conference on historical lexicography

4 Riemsdisjk , Henk Van. A case study in syntactic markedness

5 Martin, Richard M. Logico—Linguistic

6 Dihoff, Ivass R. Current approaches to African (Swahili) linguistics

7 Liang, James C P and Han, Y H. Varieties of spoken standard Chinese

8 Journal of Italian Linguistics

9 Harvey, S G T. Axiomatics semantics: A linguistic theory

10 Harbsmeier, Christoph. Aspects of classical Chinese syntax

11 Saraswati, Baidyanath. Ritual language: A transanthropological perspective

12 Nida, Eugene A. Morphology: The descriptive analysis of word.

13 Chomsky, Noam. Deep structure, surface structure and semantic interpretation

14 Shaomyan, S K. Applicational grammar as semantic theory of natural language

15 Minsky, Marvin. Semantic information processing

16 Siortsema B. Study of glossematics: critical survey of its fundamental concepts

17 Kessler, Carolyn. Acquisition of syntax in bilingual children

18 Wagner, Heinrich. Linguistic atlas and survey of Trists dialects.

19 Borras, F M and Christian, R F. Russian syntax: Aspects of modern Russian syntax and vocabulary

20 Stilman, Leon. Russian verbs of notation: going, coming and leading

21 Saksena, Baburam. Evolution of Swadhi: A branch of Hindi

22 Pandit, Prabed B. Phonemic and Morphemic frequencies of the Gujarati language

23 Watts, J Wash. Survey of syntex in Hebrew old Testament

24 Harrell, Richards. Lessons in colloquial Egyptian Arabic

25 Sanches, Mary Mildred. Features in the acquisition of Japanese grammar

26 Shamadastry, R. Origins of the Devanagari alphabets

27 Black, W H I. Comparative grammar of South African languages

28 Voyles, Joseph Bartte. Inflection, derivation in continental West Germanic languages

29 Kent, Roland G. Forms of Latin: A descriptive and historical morphology

30 Awasthi, S. *ed.* Chambers' English—Hindi dictionary

SOLUTIONS

1 420:413.1(038)
Alternate 420-31(038)
2 492.7-4
Alternate 492.7:414
3 413(09+082.2)
4 415.6
41:16
6 496.354:41.001"312"
7 495.1-31
8 450(05)
9 415.4
10 495.1:415.6
Alternate 495.1-56
11 408:391/397
12 415.5
13 415.6

14	415.4
15	415.4:007
16	413.2
17	407:415.6:3-052.2
Alternate	372.6:415.6:3-052.2
18	408.7(699.2):41(084.4)
19	482:415.6 482-56
20	482-2"31" 482:412"31"
21	491.43-01
22	491.4:414
Alternate	491.4-4
23	492.4-56:221
24	493.1:492.7-085
Alternate	493.1-085
25	495.6-5:407
26	491.43-01
27	496.8-5
Alternate	496.8:415
28	43-55
29	471-55
30	420(038)=491.43
Alternate	420=491.43(038)

5 MATHEMATICS AND NATURAL SCIENCES

1 SCOPE OF THE CLASS

The division 5 covers one of the major part os the universe of knowledge. It includes Mathematics, Astronomy, Physics, Chemistry, Geology, Geophysics, Meterology, Palaeontology, Anthropology, Biology, Biochemistry, Botany and Zoology. The applied scienccs and Engineering and Technology being covered under the division 6. The schematic presentation of the various divisions has been shown in the next section.

2 SCHEMATIC PRESENTATION OF CLASSES

- **5 Mathematics and Natural Sciences** →
  - 51 Mathematics
  - 52 Astronomy, Surveying, and Geodesy
  - **53 Physics and Mechanics** →
    - 531 Mechanics
    - 532 Fluid mechanics, Hydromechanics
    - 533 Gas Mechanics
    - 534 Vibrations, Acoustics, Sound
    - 535 Optics
    - **535 Heat, Thermodynamics** →
      - 536.1 General Thory: Temperature, Distribution, Heat, Potential, Qunantity
      - 536.2 Heat Transference, transmission
      - 536.3 Effect of bodies on heat and heat radiation
      - 536.4 Action of heat upon bodies
      - 536.5 Temperature: Measurement, control, thermometry
      - 536.6 Heat quantity: Measurement, Calorimetry
      - 536.7 Thermodynamics, heat energy
      - 536.8 Theory of heat engines
    - 537 Electricity
    - 538 Magnetism, and Electromagnetism
    - 539 Physical nature of Matter
  - 54 Chemistry
  - 55 Geology and Collateral Sciences, Meteorology
  - 56 Palaeontology Fossils
  - 57 Anthropological and Biological sciences
  - 58 Botany
  - 59 Zoology

4 SCOPE OF THE SUBJECTS

Mathematics and its various bronches are covered under the division 51. It is a science that deals with the systematic treatment of magnitude, relationships between figures and forms relations between quantities expressed symbolically and includes procedures, operations, properties and the solution of quantitative problems. Various branches included herein are: Arithmatic, Theory of numbers 511; Alegbra 512; Trigonomentry including determinants and matrices; Geometry 513; Polygonomenty and Polygonomentry 514; Descriptive geometry 515; Analytid and Coordinate geometry 516; Calculas—Differential and Integral and differential and partial differential equations 517; Mathematical games and various computing aids 518; Satistical Analysis and Probability 519;

The division 52 is concerned with Astronomy and surveying. Astronomy is a science that deals with the material universe beyond the earths atmosphere. The subject included are: theoretical astronomy including celestial mechanics description of orbits, orbital motion of planets and satellities, motion of comets. eclipses, aberration and precession, etc: Practical astronomy, descriptive astronomy including Astrophysics; Earth in relation to astronomical geography and its various aspects (e.g. constants, phryics of the globe, orbit and motions of the earth, seasons, tides and terrestrial atmosphere); Navigation, Geodesy, to 528. Geodetic surveying, Plane, field, land, and topographical surveying, geodetic instruments and equipment, photogrammetry, cartography and chronology are the subsections of geodesy and surveying, etc.

The division 53 covers Physics and Mechanics. Physics is a science that deals with matter, energy, motion and force and their interaction. This division includes various aspects and subdivisions such as: principles and methods of measurements, Theory of Relativity, Quantum theory, etc; Mechanics 531, including statics and dynamics, friction, gravitation, etc.; Fluid mechanics 532; Gas mechanics 533 included herein are-Plasma Physics, Aerodynamics, and Kinetic theory of gases; Accoustics vibrations and sound 534; Optics 535- theories of light, Photometry; Absorption and emission of light, interference—diffraction, polarization, and optical instruments; Heat and Thermodynamics 536—Heat transference, thermometry, calorimetry, energy, etc; Electricity 537—static and dynamic i.e. electrostatics and current electricity, electric discharges and electrical measurement; Magnetism and Electromagnetism 538; Physical nature of matter 539 which includes nuclear, atomic and molecular physics.

Chemistry has been assigned the class 54 but actually the subdivisian 541/547 are coneerned with chemistry and various states of substance, their occurrence and physical and chemical properties have been covered under the class 54 and its special auxiliaries. The last two subdivisions viz. 548/549 deal with Crystallography and Mineralogical science. Chemistry is a science that deals with or investigates the composition, properties and transformations of substances and various elementary forms of matter. The most important branches being Physical Chemistry, Inorganic Chemistry, and Organic Chemistry. The division 541 is used for theoretical and physical chemistry. It includes Electrochemistry, Atomic theory, chemical compounds, Valency, Chemical structure, Allotropy and classification of elements. The experimental aspects including laboratory equipment and technique are provided for under the division 542. The division 543 is devoted to Analytical Chemistry.

The various instructions provided in the division 54 are of great significance and help in the methodology of joining different divisions and special auxiliaries. Their use has been explained in different examples. The division 544 and 545 which were there in the earlier edition of ihe UDC have now been grouped under 543. The division 546 is assigned to Inorganic Chemistry, where subsections are devoted to non-metals. These have been arranged according to the periodic table and fall in different groups. The division 547 is used for Organic Chemistry. The various subdivisions include aliphatic compounds, unsaturated alkene and alkine compounds; polysubstituted acyclic compounds, ring compounds, multiring compounds, Hetrocyclic compounds and other natural substances of unknown composition.

Crystallography and mineralogical sciences as pointed out earlier have been covered under 548/549. Crystallography is the science dealing with crystallization and the forms and structure of crystals. Mineralogy deals with the study of minerals—i.e. the substances occuring in nature. Such substances usually comprise of inorganic substances as quartz or feldspar and usually have a definite crystal structure. These may sometimes include substances or products of organic origin. These divisions, therefore, cover various aspects as theories, formation, structure, etc.

The division 55 deals with Geology and Meteorology. Geology is the science that studies the physical history of the earth, the rocks of which it is composed and the physical changes which the earth has undergone or is undergoing. It also studies the geologic features and processes occuring in the earth or any of its regions or on celestial body. Meteorology on the other hand is a science that deals with the atmosphere and its phenomenon including weather and climate. The various branches covered under the division include, therefore, subjects like: Geophysics 550, Geochemistry, Practical and applied geology; Meteorology 551, Origin of earth its structure and form, external geodynamics, glaciology, marine formations, etc., Petrography, Economic geology and minerals, ores, stones.

Paleontology—the science of the forms of life existing in former geologic periods as represented by fossil animals and plants has been assigned to the division 56.

The anthropological and biological sciences is a comprehensive field encompassing the general aspects and has been assigned the division 57. Anthropology has two main divisions—the physical, and social and cultural. The social and cultural has been provided for under 39. The science that deals with the origins, physical development is covered under this division. Biological sciences deals with the science of life or living matter (plant and animal life) in all its forms and phenomenon especially with reference to origin, growth, reproduction and structure. Various subjects included are therefore: Pre-historic man; Physical anthropology, Ethnology; Genetics—Development of organism, evolution; Microbiogical techniques used to study these subjects.

The division 58 has been assigned to Botany—the science of plants. It deals with plant life. The class 581 deals with general botany and plant biology. Systematic Botany, Plant taxonomy which include the study of cryptogamia, phanerogamia, angiospermae and archichlamdeae, etc have been classed under the subdivisions of 582.

The division 59 has been assigned Zoology—the science that deals with animals. It deals with animal life, animal biology including animal physiology, diseases, embryology, organology —Anatomy, animal histology, cytology have all been classed under 591. Systematic Zoology animal taxonomy under 592/599. Thc various subjects covered include: Invertebrata; Parazoa, Coelenterata, Mollusca; Articulate, Anthropoda; Vertebrata, Pisces; Reptiles, Birds; and Mamals.

EXAMPLES

1 Cese, Donald W. America's new policy makers: The scientists rise to power

Number Building

Natural Sciences	5
Man power point of view	.007
Politics	:32
Management point of view	.008

Class Number 5.007:32.008

2 United Nations (New York). Regional plan of action for the application of science and technology for development in the Middle East.

Number Building

Science and Technology	5/6
From the point of view of plan	.001.1
Economic policy	:330.19
Middle East	(5-011)

Class Number 5/6.001.1:330.19(5-011)

3 Morgan, Robert P. Science and technology for development, role of U S Universities

Number Building

Science	5
and Technology	5/6
Point of view of development	.001.6
Universities	:378.4
U S A	(73)

Class Number 5/6.001.6:378.4(73)

4 Gupta, B M. Evaluation of Indian scientific and technical journals. *Indian Eastern Engineer*. 122, 2; Feb 1980. 51-54

Number Building

Science	5
and Technology	5/6
Periodicals	(051)
India	(051:540)
Evaluation point of view)	:001.4

Class Number 5/6(051:540):001.4

5 Dreyfus, B. Proceedings of the 5th biennial international codata conference

Number Building

Science	5
and Technology	5/6
Tables	(083)
Computer	:681.32
Conference	:061.3

Class Number 5/6(083):681.3:061.3

6 Banker, Forrest I and Wheeler, Gershon J. Mathematics for electronics.

Number Building

Mathematics	51
In relation to Electronics	:621:38
Class Number	51:621.38

7 Yanenko, N N. Method of fractional steps: The solution of the problems of mathematical physics.

Number Building

Mathematics	51
Theory of numbers	511
Factors/Fractions	.13-73
Physics	:53
Class Number	511.13-73:53

8 Flugge, Wilhelm. Tensor analysis and continuum mechanics

Number Building

Mathematics	51
Algebra	512
Tensor/vectors	.9
Mechanics	:531
Class Number	512.9:531

9 Krausosel, M A. Topological methods in the theory of nonlinear integral equations

Number Building

Mathematics	51
Geometry	513
Topology	.83
Calculas	:517
Integral	.3
Class Number	513.83:517.3

10 Indian Institute of Technology (New Delhi). Numerical analysis of plates and shells

Annotation Series of lectures delivered on the application of Numerical analysis to the shell structures.

Number Building

Mathematics	51
Analysis	517
Theory of finite differences	.949
Civil Engineering	:624
Structure	.074
Shells	.4
Class Number	517.949:624.074.4

11 Donskin, John M. Theory of maximum and minimum and its application to weapons allocation problems

Annotation Makes use of mehanical methods of calculation for weapon allocation problems

Number Building

Mathematics	51
Mechanised calculation	518.5
Military engineering	:623
Weapon	.45
Class Number	518.5:623.45

12 Davers, Owen L. *ed.* Design and analysis on industrial experiments

Number Building

Mathematics	51
Probability	519
Statistical investigation	.28

Technology	:6
From the point of view of research	.001.5
Class Number	519.28:6.001.5

13 Jaaskelainen, V. Linear programming and budgeting

Number Building

Mathematics	51
Probability	519
Linear Programming	.859
Budgeting and estimates	:657.3
Class Number	519.859:657.3

14 Van Trees, H L *ed.* Satellite communications

Number Buiding

Astronomy	52
Theoretical	521
Satellities	.6
Telecommunication	:621.39
Class Number	521.6:621.39
Alternate	621.39:521.6

15 Mortimer, J Kamlet. Organic electronic spectral data

Number Building

Physics	53
Optics	535
Spectrum	.33
Short wave	-3
Data/Schedules	(083)
Organic chemistry	:547
Class Number	535.33-3(083):547

16 Larin, Frank. Radiation effects in the semiconductor devices

Number Building

Physics	53
Electricity	537
Conductivity	.311
Semi conductors	.33
Radiation phenomenon	:537.53
Class Number	537.311.33:537.53

17 Ladbetler, H M and others. Young's modulas of a copper stabilized niobium-titanium super conductive work

Number Building

Physics	53
Physical-nature of matter	539
Elacitic moduli	.32
Metallurgy	:669
Copper alloy	.35
Niobium	‘293
Titanium	’295
Wire	—42
Class Number	539.32:669.35‘293‘215-42

18 Laidler, Keith J. Reaction Kinetics: Reactions in solutions

Number Building

Chemistry	54
Physical chemistry	541.1
Chemical Kinetics	.124
Experimental and preparative chemistry	:542
Solutions	.6
Class Number	541.124:542.6

19 Schramm, Werner. Chemistry and biology laboratories design, construction and equipment

Number Building	
Chemistry	54
Experimental	542
Biological sciences	+57
and Zoology	/59
From the point of equipment and space	.005/.006
Class Number	542+57/59.005/.006

20 Wenger, P E. *ed.* Reagents for qualitative inorganic analysis

Number Building	
Chemistry	54
Analytical	543
Qualitative analysis	.061
Inorganic chemistry	:546
Reagents	:54-4
Class Number	543.061:546:54-4
Altetnate	546:543.061:54-4

21 ElBadry, Hameed N. Micromanipulators and macromanipulations

Annotation Discusses micro analysis of chemical subs- and then deals with their macromanipulations

Number Building	
Chemistry	54
Analytical chemistry	543
Microanalysis	.063
Microscopy	:578.6
Technical scientific application	:778.3
Class Number	543.063:578.6:778.3

22 Smith, Ivor *ed.* Chrometographic techniques: Clinical and biochemical applications

Number Building

Chemistry	54
Analytical chemistry	543
Chrometography	.544
Pathology	:616
Biochemisry	:577.1
Class Number	543.544:616:577.1

23 Krishna, Isidov. Physical properties and analysis of heavy water

Number Building

Chemistry	54
Inorganic	546
Water	.212
Heavy water	.02
Analytical chemistry	:543
Physical chemistry	+541
Class Number	546.212.02:543+541
Alternate	541+543:546.212.02

24 Jordan, T Earl. Vapour pressure of organic compounds

Number Building

Chemistry	54
Organic chemistry	547
Physics	:53
Heat	:536
Vapour	.422/.423
Class Number	547:536.422/.423

25 Johnson, A L. Research in the methane generation-final report

Number Building

Chemistry	54
Organic chemistry	547
Methane	.211
Point of view of research	.001.5
Report	(047)

Class Number 547.211.001.5(047)

26 Russell, R D and Farguher, R M. Lead isotopes in geology

Number Building

Geology and Meteorology	55
Chemistry	:54
Inorganic	:546
Lead	.815
Isotope	.02

Class Number 55:546.815.02

Alternate 546.815.02:55

27 International Association of Engineering Geology. Engineering geology maps: A guide to the preparation

Number Building

Geology/Meteorology	55
Prospecting	550.8
Astronomy	:52
Geodesy	:528
Maps design	.92

Class Number 550.8:528.92

28 Luckkovski, S V. Formation of ice in lakes, rivers and seas (in Russian)

Number Building

Geology and Meteorology	55
Meteorology	551
Temperature conditions	.311.1
Lakes	:551.481
and rivers	/.482
In Russian	=82

Class Number 551.311.1:551.481/.482=82

29 World Meteorological Organization (Geneva). Plan for a regional telecommunication network for the Asian region.

Annotation The study suggests a plan for the development of telecommunication network for Asian region for use in weather forecasting.

Number Building

Meteorology	551
Weather	.509
Telecommunication-Information theory	:621.391
Interference	.82
Part of plan	.001.1
Asia	(5)

Class Number 551.509:621.391.82.001.1(5)

30 European Commission for Asia and the Far East (Bangkok). Bauxite ore resources and Aluminium industry of Asia and the Far East

Number Building

Geology and collateral Sciences	55

Economic geology	553
Bauxite ore	.442
Aluminium	:661.862
Asia and Far East	(5-012)

Class Number 553.442:661.862(5-012)

31 Poddar, M C *ed.* Proceedings of the Seminar on oil prospects in the Ganga Valley

Number Building

Geology and collateral Sciences	55
Economic geology	553
Mineral oil	.98
Prospecting	:550.81
Valleys	:551.3
Ganga Valley	282.253.21
Conference Proceedings	(082.2)

Class Number 553.98:550.81:551.3(282.253.21)(082.2)

32 Quastter, Henry *ed.* Essays on the use of information theory in biology

Number Building

Biological Sciences	57
Biology	574
Information theory	:007
Essays	(04)

Class Number 574:007(04)

33 Ledingha, G A and Blackwood, A C. Review of industrial microbiology in British Commonwealth countries

Number Building

Biological Sciences	57
Microbiology	576.8

Periodicals	(05)
British Commonwealth	(41-44)
Technology	:6

Class Number 576.8(05)(41-44):6

34 Abramson, A A and others. Electrophoresis of proteins and the chemistry of cell surfaces

Number Building

Biological Sciences	57
Cytology	576.3
Biochemistry	+577.1
Proteins	547.96
Analytical chemistry	:543
Electrophoresis	.545

Class Number 576.3+577.1[547.96]:543.545

35 Stern, Kurt and Willheim, Robert. The biochemistry of malignant tumours

Number Building

Biological sciences	57
Biochemistry	577.1
Pathology	:616
Tumours	-006
Malignant	.04

Class Number 577.1:616-006.04

36 Malo, M K *ed.* Ecology and coal resource development: A symposium

Number Building

Biological Sciences	57
General properties of life	577

Ecology	577.4
Coal	:622.3
Seminar proceedings	(082.2)
Class Number	577.4:622.3 (082.2)

37 Cutter, D F and Richardson, I B K. Tree roots and buildings

Number Building

Botany	58
Plants	581
Roots	.42/.45
Building industry	:69
Damage, repair	.059.22
Class Number	581.42/.45:69.059.22
Alternate	69.059.22:581.42/.45

38 Shepherd, H H *ed.* Methods of testing chemicals on insects

Number Building

Zoology	59
Arthopode	595
Insects	.7
Drugs, according to action	:615.7
Class Number	595.7:615.7
Alternate	615.7:595.7

EXERICISES

1 Gold, Victor. PH measurement: Their theory and practices

2 Council of Scientific and Industrial Research (New Delhi). First get together of research and industry

3 Van Hook, Andrew. Crystallization: Theory and Practice

4 UNESCO. Combined heat, ice and water balance at selected glacier basins

5 Haritash, Nirmal. Parliament and science: An empirical study of question hour. *Journal of scientific and Industrial Research*. 40,7; Jul 1981. 411-15.

6 Watson. G A *ed.* Proceedings of the conference on the numerical solutions of differential equations

7 Sokolov, A A and Chapman T G. Methods for water balance computations

8 UNESCO. Hydrological maps

9 Patten, B C *ed.* Systems analysis and simulation in Ecology

10 Jones, Graham. Role of science and technology in developing countries

11 India, Department of Science and Technology. Science and Technology plans in India 1974/79

12 India, Department of Science and Technology. Sectoral report on Science and Technology plan for heavy engineering

13 Norris, G. Justifying research and teaching objective in the Universities

14 Michaelis, Anthony R and Harvey, Hugh *ed.* Scientists in search of their conscience

15 Dorn, William S. Introductory finite mathematics and computations

16 Sharma, K D and Quereshi M A *ed.* Science, technology and development: Essays in honour of A Rahman

17 Landerson, Robert Thomas. Vacuum manipulation of volatile compounds: A laboratory manual describing the application of high vaccum technique in experimental Chemistry

18 Wolstenholme, G E W and Mullar, E C P. Ciba foundation symposium in paper electrophoresis

19 International Atomic Energy Agency. Tritium in the physical and biological sciences: Proceedings of the symposium on the detection of radio activity of tritium in the physical and biological sciences

20 Barnett, E de Barry. Mechanism of organic chemical reactions

21 Honeyman, T *ed.* Recent advances in the Chemistry of cellulose and starch

22 Welcher, F J. The analytical uses of Ethylendiamine tetracetic acid

23 Wahistron, E E. Optical crystallography with particular reference to the use of theory of polarizing microscope

24 UNESCO. Utilization of saline water: Review of research

25 United States, War Department. Basic weather for pilot trainees

26 Hales, L J. Biological laboratory data

27 Bisset, K A. The cytology and life history of bacreria

28 Guenther, William C. Sampling inspection in statistical quality control

29 Thrstensen, Peter T. Practical design of pH control systems. *Journal of the American Leather Chemists Association.* 74, 12; Dec 1979; 442-453

30 Kelly, F H C. Practical mathematics for chemists

31 Brown, C and others *ed.* Decision making in the water resource allocation

32 Noddor, E. Inventory systems

33 UNESCO. Mathematical models in Hydrology

34 Daetz, D and Pantell, R H. Enviornmental modelling

35 Cheronis, Nicholas D. A textbook of micro and semi micro quantitative inorganic analysis

36 Mitchell, T and Smith D M. Aquametry: Application of the Karl Fischer reagent to quantitative analysis involving water

37 Sherrington, Charles and Liddell, E G T. Mammilian physiology

SOLUTIONS

1 541.132.3:543.257
2 5/6.001.5:62.001 (082.2)
3 548:66.065.5
4 551.482:551.311.1
5 5/6.008.1:342.537(540)
6 517.949:061.3
7 551.49:51
8 551.49(084.3):528.92
9 577.4:681.32:519.876.5:061.3
10 5/6(1-77)
11 5/6.001.1 (540)"1974/1979"
12 5/6.001.5:62-183(047)
13 5.001:378
14 5.007.172.3
15 51:681.3
16 5/6.001.6(04)
17 542.77:533.5
18 543.257(082.2)
19 546.11.023(082.2):539.163
20 547:541.124
21 547.458(047.1)
22 547.466.4:543.3
23 548:535.822
24 551.464.004.14
25 551.509:629.1-476
26 574.006.2(083)
27 576.85.094
28 519.28:658.562
29 541.132.3:621-5:675

30 51:54+56
31 519.816:628.1
32 519.8:658.787
33 551.48/.49:519.673:061.3
34 577.4:628.19:65.012
35 543.063:546
36 546.212:543.062:54-4
37 599:591.1

6 APPLIED SCIENCES, MEDICINE & TECHNOLOGY

1 SCOPE OF THE CLASS

The outline of the division 6 indicates that this class includes Medical Sciences; Engineering and Technology; Agriculture Forestry, Fisheries; Domestic Science; Office Management and Business Techniques; Chemical Industry and Chemical Technology; Manufactures, etc; Building Industry and other specialized trades.

The various divisions have been presented schematically in the next section.

2 SCHEMATIC PRESENTATION OF CLASSES

- **6 Applied Sciences. Medicine and Technology** →
  - 60 General considerations. Inventions.
  - 61 Medical Sciences. Health and Safety
  - **62 Engineering and Technology** →
    - 620 General aspects. Materials, testing. etc.
    - **621 Mechanical and Electrical Engineering** →
      - 621.0 General questions
      - 621.1 Steam power, Engines/ Boilers
      - 621.22 Water Power. Hydraulic Energy
      - 621.3 Electrical Engineering
      - 621.4 Internal combution and other special Engines
      - 621.5 Pneumatic Energy. Refrigeration and Heat Pumps
    - 622 Mining and Mineral Dressing
    - 623 Military and Navel Engineering and Technology
    - 624 Civil, Structural Engineering
    - 625 Railway and Highway Engineering
  - 63 Agriculture. Forestry. Stock breading. Animal produce. Hunting and Fishing
  - 64 Domestic Science. Household Economy. Hotel management
  - 65 Management. Organization of Industry and Commerce. Business, Communication and Transport

66 Chemical Industry. Chemical technology
67 Industries and Crafts based on Processable Materials
68 Crafts and Industries for Finished Articles and Goods
69 Building Industry Materials. Trades and Construction

626 Hydraulic Engineering and Construction work
627 Natural waters and channels. Rivers, Ports, Harbour and Coast work
628 Public Health Engineering
629.1 Transport Engineering

621.6 Fluid Distribution, Storage containers. Pipes and Pumps
621.7 Workshop Practice. Plastic working, etc.
621.8 Power transmission. Materials Handling. Mechanical Fixing
621.9 Machine tools and Machining

3 DETAILS OF THE CLASS

The division 61 and its subdivisions are devoted to the medical science. The subject deals with the art and science of restoring, preserving health and physical condition. The diseases may be cured by treating them with drugs as curative substances and in certain cases surgery may have to be performed. Various aspects covered under this division are therefore: Anatomy both systematic and special under 611.1/.8, the regional anatomy having been assigned 611.9; Physiology under 612. The general theories and principles being classed under 612.01 and its subdivisions, and special physiology including that of the blood and circulation system; Respiration; Digestion and Nervous system under 612.1/.8. General and personal health have been assigned 613 and Public health and safety having been assigned the number 614. Some of the important aspects covered under this area are: Food, Drugs, Health and sanitary inspection, prevention of infection, disposal of the dead—air, soil and water hygiene, etc. The subject of Pharmacy, Pharmacology, therapeutics and toxicology have beea assigned to the class 615. The division 615.6 being vacant. The division 616 and its subdivisions are used for diseases; pathology and medicine. The sections 616.1/.8 are devoted to special pathology—such as cardiovascular and blood diseases, respiratory diseases diseases of haemopoietic and endocrine systems, skin diseases and dermatology, etc. The last subsection 616.9 includes infectious diseases and specific infectious fevers, venereal diseases and specific infections. The division 617 and its subdivisions cover surgery and related topics. The division 618 and its subdivisions are used for gynaecology and obstetrics. The last section 619 is assigned to comparative pathology.

The Engineering and Technology have been assigned to the class 62 and its subdivisions. The subject of Engineering deals with the art or science of making practical application of the knowledge of pure science such as Physics, Chemistry, etc. Whereas Technology is that branch of knowledge that deals with industrial arts, applied sciences and engineering. The application of this knowledge is for practical ends. This aspect has been scattered in the UDC under 62, 66, 67 and

68 etc. The UDC makes extensive use of special auxiliaries. The divisions 620.1/.9 cover varioua aspects such as material testing, economics of energy.

Division 621 is used for Mechanical and Electrical Engineering. Included in the class 621.1 : are steam engines, working of steam plants, and steam boilers. Other aspects of water power covered are water wheels and hydraulic power plants 621.2. Electrical engineering has been assigned 621.3. Lengthy subsection of 621.3 includes general electrical engineering, Power supply, distribution and control, electric machines, transformation, switchgear, instruments and indicators, applied magnetism, applied electrostatics, electric lamps and traction, thermo-electricity, techniques of electric and electromagnetic waves, electronics, telecommunications, telegraphy, telephoney, radio, communication, television and telecontrol. Other important subsections include internal combustion and other special engines pneumatic energy and tools and mechining, etc. The division 622 is used for mining and mineral dressing and specific aspects of mining and minerals such as preliminary investigation, mining operations, specifie minerals, mine services, mine water, haulage and handling, mineral dressing and safety and health protection in mines, etc, The next division 623 is for military, naval engineering and technology. Civil and structural engineering is devoted to the division 624. The instruction indicates that general works are classed under 624 and the division .01,.04,.07 for all structures by use of .02/.03 and .05 is preferred at 69. The primary topics here are structural engineering, (e.g. earthwork, foundations, snow and ice engineering, abutments, tunnels and tunnelling. Subsections 624.2/.9 cover superstructure and bridges. The division 625 and its subdivisions are used for railway and highway engineering. The section 626 is used for Hydraulic Engineering and construction work with subsection inland waterways, feeding, forms and cross section of canals, locks, ship lifting gear, haulage, agricultural hydraulics and maritime canals. Natural waters and channels are assigned to the class 627. The next division 628 is devoted to public health engineering. Some of the important subjects included here are water supply, town drainage, sewage, town sanitation, industrial sanitation, drainage, indoor climate engineering (large space, tunnels, arcades) health and comfort aspects; and illumination engineering. The last division of 62 i.e. 629 is used for Transport Engineering which includes subjects like road vehicles, shipbuilding, boats, aeronautical engineering, and astronautics, etc.

The division 63 is used for agriculture and related fields. The subject concerns itself with the science and art of cultivating land in the raising of crops, husbandry and farming. Its division 631 is devoted to general agriculture, agronomy and farming and more important subsections include farm management, agricultural implements, soil sciences, cultivation methods, rural engineering, fertilizers and agricultural influences. Plant injuries, plant diseases and pests have been covered under 632. The field crops and industrial crops nave been included under 633. The various subdivisions include cereals, forage, leguminous, roots, and tubers as field crops, fibre plants and crops, sugar and starch-yielding crops, stimulant-yielding plants, and various crops for industrial processing. The class 634 is concerned with arboriculture, gardens 634.1/.8 is devoted to fruit growing. Horticultural gardens and gardening are the subjects which have been covered under class 635. The divisions 636/639 cover animal husbandry, stock breeding, animal produce and fisheries. Stock breeding has been assigned to the class 636. It includes livestock, domestic animals, pets and, therefore, covers horses, cattle, smaller ruminants, pigs, poultry, birds kept for plumage, dogs, cats, and other useful animals and pets. The insect and reptile management, beekeeping, silkworm, coccid insects, other insects (ant, grasshoppers and crickets), arachnids and, ornamental insects and reptiles have been covered under 638. Dairy and other animal produce and their related technologies have been covered under 637. The class 639 has been assigned to game and fish management. Covered here are hunting and shooting, fisheries, fish breeding, molluses and shell fish, crustaccans, various marine animals and plants products and breeding and keeping ornamental animals.

Division 64 encompasses domestic science, household economy, housekeeping, home and hotel manangement and catering, etc. Food and cookery includes nutritional aspects food according to source and season, preserving, cleaning, etc. These have been covered under 641. The class 642 provides for meals, and table service The divisions 643/645 are devoted to the home and household equipments. Included in 643 are subjects like: site and surroundings, room size, kitchen, kitchen equipment, dining and various ancillary rooms, bed rooms living rooms, etc labour saving installments, care and upkeep of rooms, cellers, and attics. Whereas other aspects like heating, lighting, ventilation and water supply have been included under 644 and furnishing, coverings and fittings under 645. The division 646 includes clothing, and general appearance. Section 647 is assigned to household staff and hospitality. Laundering has been included under 648. The last division 649 covers home care of children, invalids and guests; included in this are all aspects of care of children.

Management, organisation of industry and commerce, communication and transport, and business have been assigned to the division 65. Office equipment, office practice, record document files and achives, office correspondence, etc. have been classed under 651. The division 652 and 653 are under change. The long distance and telecommunication services have been put under 654. The division 655 is used for printing, publishing and book trade, including subsections like typography and printing, printing surface, press work, and publishing and bookselling. The class 656 covèrs transport and postal services, with subdivisions like land, road, railway, water, and air transport. The next division of 65 i.e. 657, is assigned to Accountancy and bookeeping. Subjects covered are bookeeping systems and techniques, conduct of calculations, books and records for accounting, accounts and accounting operations, accountancy according to object, official control of accounts and valuation. The forms of business, works and shop management and techniques have been covered under 658. Some of the important subjects covered are Human relations, production management and control, commercial and trading business technique, and marketing. The last division is 659 and covers the mass communication media i.e. publicity, advertising and information.

The largest division of the division 6 is 66, which is assigned to chemical industry and chemical technology. The division 66.0 and its subdivision has been assigned to works on chemical engineering, which includes chemical processes, processes for specific industries, heat transfer treatment, working with liquids: handling, treatment working witn gases, physical—chemical operations, and special chemical processes. The first section 661, deals with chemicals. Explosives including fireworks, high explosives, gun powders, detonators, etc. have been classed under 662.1/.4. Fuels, heating and combustion are eovered under the class 662.6/.9. The division 663 is used for beverages and stimulants. Food industries and preservation have been classed under 664. Some of the important subdivisions are: sugar industry, starches, edible and cooking fats and oils, mineral foodstuffs, spices and condiments; baking, bread and flour confectionery, flour and corn milling, preservation of organic products, preservation of animal produces. Oils, fats and waxes, natural oil, fats, waxes and products made from these are the subjects covered under 665.1/.3, while 665.4/.5 cover mineral oils and petroleum. Glass and ceramic industries have been classed under 666. Various organic chemical industries have been assigned to 668. The last division i.e. 669 deals with metallurgy which deals with ferrous and non ferrous metals their extraction, processing, etc.

The division 67/68 is assigned to manufactures, which includes industries and crafts based on processable materials, and specialized trades, crafts and industries for finished articles and goods. The subjects covered include: Jewellery 671; Iron, and steel goods 672; non-ferrous metal goods 673; timber and pulp 676; textile industry 677; rubber and plastics 678; and other industries based on various processable materials 679.

The division 68 is used for specialized trades, crafts and industries for finished articles and goods such as: Precision machines, optical apparatus, etc., smithery; Iron mongery; Furniture, upholstery; Foot wear, gloves, travel and other equipment, toilet articles, clothing industry; Fancy and decorative goods; toys; hobbies, and the book binding stationery have all been classed under 686.

The division 69 is the last section in this class, and covers building industry, materials, trades, and construction including all problems of building construction, contracting and site work. All phases of building activity are classified here.

EXAMPLES

1 Kiss, Alexander Charles. Survey of current developments in international environmental law

Number Building

Medical sciences	61
Public health and safety	614
Pollution	.7
International agreements	:314.24
Developments	.001.6

Class Number 614.7:341.24.001.6

2 Vander Plaotrs, G J. Medical X-rays techniques: Principles and applications

Number Building

Medical Sciences	61
Therapeutics	615
Radiotherapy	.849
Pathology	:616
Radio diagonosis	-073

Class Number 615.849:616-073

3 Miller, F J W and others. Tuberculosis in children: Evolution, cotrol and treatment

Number Building

Medical sciences	61
Disease	616
Tuberculosis	-002.5
Children	:3-053.2

Class Number 616-002.5:3·053.2

4 Marxwell, M H and Kleeman, C R *eds*. Clinical disorders of fluid and electrolyte metabolism

Number Building

Medical Sciences	61
Pathology	616
Metabolic disorder	-008
Physiology	:612
Nutrition	.39
Electrolytes and electrolism	[541.135]

Class Number 616-008:612.39 [541.135]

Alternate 612.39.015[541.135]:616-008

5 Cetron, M J and Ralph, C A. Industrial application of technology and its utilization on R & D management

Number Building

Engineering and technology	62
Planning	.001.1
Management	:65
Research & Development	.012.2

Class Number 62.001.1:65.012.2

6 Rayon, W S. Network analysis in forming a new organization

Number Building

Engineering and technology	62
Organization point of view	.008
Working techniques	:001.8
Business management	:658
Analysis	.511

Class Number 62.008:001.8:658.511

7 United Nations Industrial Development Organization (Vienna). Appropriate industrial technology for low cost transport for rural areas.

Annotation Discusses development of the appropriate technology for providing transport services in rural areas at low cost.

Number Building

Engineering and Technology	62/69
Research and Development in Science	.001.5/.6
Transport	:656
Rural areas	(1-202)
Economic point of view	.003.1

Class Number 62/69.001.5/.6:656(1·202).003.1

8 Saylor, Charles Proffer. Observation of surface changes in platinum crucibles. *Journal of Research of the National Bureau of Stadards*, 84,5: Oct. 1979; 385-394.

Discusses surface changes in Platinum crucible by heat treatment.

Number Building

Engineering and Technology	62
Materials testing	620.1
Surface defects	.191
Heat treatment	:621.785
Apparatus	:542.2
Crucible	.232.54
Platinum	669.231
Observation	.001.51

Class Number 620.191:621.785:542.232.54[669.231].001.51

9 Noble, Lawerence E and Good, J Lawerence. Installation of concrete anchors in nuclear power plant. *Quality Progress*. 14,4; Ap. 1981; 20-23.

Number Building

Engineering and Technology	62
Nuclear technology	621.039
Power station	[621.311.2]
Arches	:624.023

Class Number 621.039[621.311.2]:624.023

10 Abdel Aziz. Nuclear proliferation and national security

Annotation Discusses the dangers of nuclear proliferation to international peace and national security.

Number Building

Engineering and technology	62
Mechanical and Electrical Engineering	621
Nuclear technology	.039
Applications	.9
Weapons	:623.45
International peace movement	:327.4

Class Number 621.039.9:623.45:327.4

11 Schwels, A J. High voltage measurement techniques.

Number Building

Engineering and technology	62
Mechnical and Electrical Engineering	621
Electrical engineering	.3
High voltage	.027.3
High voltage measurement	:621.3.083

Class Number 621.3.027.3:621.3.083

12 Gise, P E and Blanchard, R. Semiconductor and integrated circuit fabrication technique

Number Building

Engineering and Technology	62
Electrical Engineering	621.3
Transmission	.315
Semi conductors	.59
Circuit construction	:621.3.049.77

Class Number 621.315.59:621.3.049.77

13 Taue, J *ed.* Amorphous and liquid semiconductors

Number Building

Engineering & Technology	62
Electrical Engineering	621.3
Transmission	.315
Liquid semiconductors	.592
Amorphous	:54-16

Class Number 621.315.592:54-16

14 Clarricoats, P J B. Microwave ferrites

Annotation Discusses use of ferromagnetic materials for microwave osillations

Number Building

Engineering & technology	62
Electrical engineering	621.3
Magnetic material-ferro	.318.1
Electromagnetic waves	:621.37
Microwaves	.029.7

Class Number 621.318.1:621.37.029.7

15 Keyes, R J . Optical and infra red detactors

Number Building

Engineering and technology	62
Electrical engineering	621.3
Detectors	.376.3
Optics	:535
Infrared	-1
Class Number	621.376.3:535-1

16 Baker, John B. Design approach of installation nozzles in FRP Tanks and pressure vessels.

Number Building

Engineering and technology	62
Mechanical and Electrical Engineering	621
Tanks	.642
Jets/Nozzles	621.647.3
Plastics	:678.5/.8
Design	.001.1
Class Number	621.642 [621.647.3] :678.5/.8.001.1
Alternate	678.5/.8:621.642.3:621.647.3

17 Volodin, N V. English-Russian Military Engineering Dictionary

Number Building

Engineering and technology	62
Military engineering	623
Dictionary	:030.8
English	=20
Russian	=82
Class Number	632 : 030.8=20=82

18 World Armaments and Disarmaments Facts and Figures: SIPRI Yearbook

Number Building

Engineering and technology	62
Military engineering	623
Armaments	-94
Disarmaments	:341.67
World	(100)
Yearbook	(083)

Class Number 623-94 : 341.67 (100) (083)
Alternate 623-94 (083) (100) : 341.67

19 Isby David, C . Weapons and tactics of the Soviet army
Annotation Discusses training of the military personnel and adoption strategies and tactics in the use of weapons.

Number Building

Engineering and technology	62
Military engineering	623
Weapons	.45
Military tactics exercises	:355.541.2
Russia	(47)

Class Number 623.45 : 355.541.2 (47)

20 Ramaswamy, G S. Design and construction of concrete shell roofs

Number Building

Engineering and technology	62
Civil engineering	624
Roofs	.024
Shell structures	.4
Concrete	:691.32

Class Number 624.024.4 : 691.32

21 Gogate, Anand B. Structural design of reinforced concrete sanitary structures: past, present and future. *Concrete International Design and Construction.* 3,4;Ap. 1981; 24-28

Number Building

Engineering and technology	62
Public health engineering	628
Sewers	.2/.4
Reinforced concrete	:624.012.45
Class Number	628.2/.4 : 624.012.45

22 Birch, N H and Bramson, A E. Flight briefing for pilots

Number Building

Engineering and technology	62
Transport engineering	629.1
Pilots	·476
Training for specialized trades	:373.63
Class Number	629.1-476 : 373.63

23 Reibsaman, Gray G. World guide to battery powered road transportation: Comparative technical and performance specifications.

Number Building

Engineering and technology	62
Transport engineering	629.1
Automobile engineering	.113
According to motive power	-8
Guide books	(026)
Class Number	629.113-8 (026)
Alternate	629.113 : 621-835 (026)

2 Paushkin, Y M. The chemical composition and properties of fuels for jet propulsions.

Annotation The chemical composition and properties of the fuel supplied at the base to the jet propulsion aircrafts has been discussed in detail.

Number Building

Engineering and technology	62
Transport engineering	629.1
Aeronautical engineering	629.13
Fuel	.139.5
According to motive power Jet	:621-8 [629.1.035]

Class Number 629.139.5 : 621-8 [629.1.035]

25 Crouse, William H and Anglin, Donald L. Automotive emission control

Annotation Deals with air polution control of the emission from the automative vehicles.

Number Building

Engineering and technology	62
Auotomotive vehicles	629.113
Internal combustion engines	:621.4
Fuel mixture	.43.013
Control	-5
Pollution, air	:614.71

Class Number 629.113:621.43.013-5:614.71

26 Patel, A R and Madalia, V K. Energisation of pump sets: Prospects and problems. *Agricultural Engineering Today* 3,6; Dec. 1979, 7-10.

Annotation Explains the problems and prospects of energisation of pumps used for irrigation purposes

Number Building

Agriculture	631
Irrigation	631.67
Mechanical and electrical engineering	:621
Pumps	.65
Utilization of energy	[620.93]
Class Number	631.67 : 621.65 [620.93]

27 Kometet, Standartov. Quality control on agricultural products in Russia.

Number Building

Medical sciences	61
Public Health and safety	614
Food inspection and control	.31
Agriculture	:631
Standardization	:389.6
Russia	(47)
Class Number	614.31 : 631 : 389.6 (47)
Alternate	631 [614.31] : 389.6 (47)

28 Subramanian, M R. Cashew export: Improved packaging a step towards guaranteeing quality. *Packaging India.* 12,3; April-Jun 1980; 21-24

Number Building

Agriculture	63
Cashewnuts	634.573
Export	:382.6
Packaging	:621.798
Class Number	634.573 : 382.6 : 621.798
Alternate	382.6 [634.573] : 621.798

29 Srinivasan, M R. Milk products of India

Number Building

Agriculture	63
Dairy and other animal products	637
Forms of milk	.14
India	(540)

Class Number 637.14 (540)

30 Iracki and others. Optimization techniques

Number Building

Management	65
Methods	.012
Planning	.122
Scheduling	:658.513
Statistical analysis	:519.7

Class Number 65.012.122:658.513:519.7

31 Freedman, A I and Lees, R A. Real time computer systems.

Number Building

Management	65
Accountancy	657
Cost accountancy	.47
Computer	:681.31

Class Number 657.47:681.31

32 Mande, Barry. Leadership in management

Number Building

Management	65
Business Management	658
Leadership	:301.172

Class Number 658:301.172

33 Callaham, L I. Russian-English chemical and polytechnical dictionary

Number Building

Chemical Technology	66
Dictionary	:030.8
Russian	=82
English	=20
Class Number	66:030.8=82=20

34 Kochhar, A K. Development of computer based information system

Number Building

Management	65
Business management	658
Production engineering	.5
Computer system	:681.322
Planning and development	:65.012.122
Class Number	658.5:681.322:65.012.122
Alternate	681.322:65.012.122:658.5

35 India, Department of Science and Technology. Report on science and technology: Plan for Chemical Industry

Number Building

Chemical technology	66
Science and technology	:5/6
Plans	.001.1
India	(540)
Class Number	66:5/6.001 (540)
Alternate	5/6.001.1 (540):66

36 Purkiss, B E. Biotechnology of industrial water conservation

Number Building

Chemical technology	66
Industrial water	663.6
Bio-technology	:574.6
Class Number	663.6:574.6

37 Patrick, R L. Treatise on adhesion and adhesives

Annotation The treatise discusses the intra-molecular properties of adhesive substances

Number Building

Chemical technology	66
Organic chemical industry	668
Adhesives	.3
Macromolecular materials	:678
Mixings	.06
Adhesion	:539.61
Class Number	668.3:678.06:539.61

38 Gifkins, R C. Optical microscopy of metals

Number Building

Chemical technology	66
Metallurgy	669
Properties of metals	.018
Optical	.6
Microscopy	:535.822
Class Number	669.018.6:535.822

39 Brightman, R W and others. Data processing for decision making: An introduction to third generation information systems

Number Building

Computer	681.31

Data processing	:001.8
Decision making	:65.012.4

Class Number 681.31:001.8:65.012.4

40 Mukerjee, Ajit. Folk toys of India

Number Building

Fancy and decorative goods	688
Toys	.72
Folk	:7.031.4
India	(540)

Class Number 688.72:7.031.4(540)

41 Sott, G. Building disaster and failure: A practical report.

Number Building

Building industry	69
Damage and repair	.059.22
Report	(047)

Class Number 69.059.22(047)

42 Hasethinc, B A and Tult, J N. Brickwork retaining walls

Number Building

Building industry	69
Masonary	693
Bircklaying	.22
Foundations	:69.021
Retaining walls	/.022.2

Class Number 693.22:69.021/.022.2

43 Gloag, H C and Gold, M J. Colour coordination handbook

Number Building

Building industry/materials	69
Painting	698.1
Colours	:667-12
Colour mixing	:535.62
Class Number	698.1:667-12:535.62

44 Varshneya, J K. Painting on new woodwork

Number Building

Building materials	69
Painting	698.1
Wood	:691.11
Class Number	698.1:691.11

45 Langdon, Thomas. Fire protection in factory building

Number Building

Building materials	69
Protective	699.8
Fire resisting construction	.81
Factories	:725.4
Class Number	699.81:725.4

EXERCISES

1 Mitchell J R. Guide to meat inspection in the tropics.

Annotation: Gives guidelines for inspection of flesh in the tropical regions

2 World Health Organization (Geneva). Microbiological aspects of food hygiene: Report of a WHO Expert Committee with participation of FAO

Annotation WHO/FAO Expert Committee report discusses the examination of impurities in food through the use of biochemical analysis.

3 Sitting, Marshall. *ed.* Priority toxic pollutants, health impact and allowable limits.

4 Sitting, Marshall. Pollution control in the organic chemical industry

Annotation: Deals with specifications on pollution in organic chemical industry

5 Saxena, A N. Industrial safety

Annotation: Provision of safety measures for workers in industrial establishments

6 U S Department of Health, Education and Welfare. Safety goggles—testing

7 Patel, H B and Banerjee, S. Plastics in sanitation hygiene and medicare. *Popular Plastics and Rubber* 26,6;1980

8 Society of Automotive Engineers and American Society for Testing and Materials. Relationship between oil viscosity and engine performance

9 Speyer, Irwin J. Considerations for the design of precast concrete bearing wall buildings to withstand abnormal loads

10 MoTavish, K W. Applied computer simulation in marine engineering—clutch maneouvring assessment. *Shipbuilding and Marine Engineering International.* 104, 1245; Jan-Feb., 1981; 29-32.

11 Larrabee, E Eugene. Screw propellers. *Scientific American.* 243, 1; 1980

12 Bearmonst, I H. Hand-operated barmill for decorating sunflower seed.

13 Urskipp, T P and Thomas, G J. Airborne birds: A study into the importation of birds into the United Kingdom.

14 Sanyal, A. Quality container bags: Future challenges
Annotation: Discusses quality control of container bags.

15 Wilson, T N and Roberts, G G. Heavy metals in refinery effluents.

Annotation: Discusses treatment of heavy metals as factory effluents and wastes.

16 Mahajan, S D and Govi, K. Blending of polynosic with cotton in fine mixing: A case study. *Journal of the Textile Association*. 40,6; 1978

17 Kirmiz, J P. Adaptation to desert environment: A study on Jerboa, Rats and Man

18 Garattini, S and Paoletti, R *eds*. Drugs effecting lipid metabolism

19 Leone, C A. Effects of ionizing radiation on immune processes

20 Smith, D W. Energy structure and reactivity

21 Urrary, A C. Steam tables in metric units

22 Blacke, R S. *ed.* Static relays for electronic circuits.

23 Donkundwar, S A course in refrigeration and air conditioning

24 India, Ministry of Education. Engineering glossary: Soil mechanics, hydraulic engineering, railway engineering, irrigation engineering (from Hindi to English)

25 Crafts, A S. The chemistry and mode of action of herbicides

26 Davis, J G. Dictionary of dairying

27 Mody, Ella. Decorative art in modern interiors

28 Higgins, James M. Organizational policy and strategic management: Facts and cases

29 Williams, J J. System engineering for process industries

30 Hersch, C K. Molecular sieves.

31 Semchyshen, M and Hardwood, J T.: Refractory metals and alloys.

32 Waddel, J J. Practical quality control for concrete

33 Colombier, L and Hochmann, J. Stainless and heat resisting steels.

34 Kissin, G H. Finishing of Aluminium

35 Cow, Henry J. Science and building: Structural environmental design in the 19th and 20th century
36 Febro, M D. Modern furniture: Its design and construction
37 Ground-Water I S. Solar radiation in air conditioning

SOLUTIONS

1 614.31:637.5(213)
Alternate 637.5:614.31(213)
2 614.31:543.9-078
3 614.7:628.5:614.878
4 614.7:628.51:661.7
5 658.382.2/.3:614.8
6 614.893:681.738.072.4:620.1
7 615.4+696.14:678.5
8 621.43.018:621.892:532.13
Alternate 621.892:532.13:621.43.018
9 624.042:69.022:691.327
Alternate 69.022:691.327:624.042
10 629.12.014:621-578:681.3
11 629.12.037
Alternate 629.13.038
12 633.854.78:631.561.4
Alternate 631.561.4:633.854.78
13 656.7.025(42):636.5/.6
14 658.562:621.798.15
Alternate 621.798.15:658.562
15 665.54:628.54:546.3
16 677.021.166:677.46:677.21
Alternate 677.46:677.21:677.021.166
17 612.014.5(252):575.3
18 615.7:612.39.015:577.15[547.915]
Alternate 612.39.015:577.15[547.915]:615.7

19 614.898.2:616-097
20 620.93:541.42
21 621.1(083.3):389.151
22 621.318.5721:621.38
23 621.56/.59+628.84
24 624.131(038)=914=20
25 632.954
26 637(038)
27 645.5
28 651.011
29 66.02:001.8:658
30 661.18:66.066
31 669.2/.8:666.7
32 691.32:666.97
33 669.14.018
34 669.71:621.794
35 69+5(091)"18/19"
36 684.5:749
37 697.97:551.52

7 THE ARTS. RECREATION. ENTERTAINMENT. SPORTS. ETC.

1 INTRODUCTION TO THE CLASS

The outline of the division 7 shows that this class includes the subjects: The Arts, town and country planning; Landscape; Architecture; Sculpture; Drawing including decorative and industrial arts and crafts; Painting; prints; engraving; graphic arts; photography: its equipments, use, system, processes and cinematography; Music including various kinds of music, the different instruments, etc; entertainments through films, cinema, drama, theater and sports, games, etc.

2 SCHEMATIC PRESENTATION OF THE CLASSES

- **7 The Arts. Recreation Entertainment. Sports. Etc.** →
  - 71 Physical planning. Land scape. etc.
  - 72 *Architecture*
  - 73 Sculpture and the Plastic arts
  - 74 Drawing and Minor Arts
  - 75 Painting
  - 76 Engraving. Prints
  - 77 Photography and Cinematography
  - **78 Music** →
    - 781 Theory of Music
    - 782 Dramatic Music
    - 783 Sacred Music. Church Music
    - 784 Vocal and choral Music (secular)
    - 785 Instrumental Music
    - 786 Keyboard Instruments
    - 787 String Instruments Viols, etc.
    - **788 Wind. Brass and wood-wind Instruments** →
      - 788.1 Trumpets
      - 788.2 Trombones
      - 788.3 Cornet
      - 788.4 Horns
      - 788.5 Flute, Piccolo, etc.
      - 788.6 Clarinets
      - 788.7 Oboe. Cor anglais
      - 788.8 Bassoon and Contrabasoon
      - 188.9 Other Wind Instruments.
    - 789 Percussion and mechanical instruments
  - 79 Entertainment Pastimes. Games. Sport

3 DETAILS OF THE CLASS

The generalities of arts are devoted to divisions 7.0 to 7.097. All these divisions are as special auxiliaries and are applicable at 71/76 and 78/79. These includes the various aspects of the recreations, entertainments, sports, arts, such as: Aesthetics, the technique and craftsmanship, the styles and arts of different periods such as the prehistoric; ancient, mediveal, modern, etc; Application of arts in industry and the features of specific arts. Their application to 71/76 and 78/79 has been illustrated in examples and exercises.

The division 71 deals with physical planning and landscape. It includes town and country planning, regional development, urban and rural development, the general grouping and site planning of various buildings. The practice and procedure of landscaping has been covered under 712. The national parks, gardens, and their landscapaing has also been covered under 712. The division 713 to 717 has not been assigned any subject and cemeteries have been covered under 718.

The desinging of buildings, open areas, the style of buildings, etc. with regard to their functional and their aesthetic effects is covered under architecture which has been assigned to the class 72/729.9. The general aspects like planning, designing, layout, optical effects and the buildings according to different techinques and periods are classed under 72.0 to 72.036. The designing generally has been assigned the number 721. The public, civil, commercial buildings have been assigned to the class 725, whereas the sacred buildings like temples, chapels, cathedrals, churches under 726. The building of the educational institutions and other cultural societies have been assigned to class 727 and residential, and domestic buildings have been classed under 728. The class 729 which deals with decoration and fittings is applicable to the different types of buildings which have been assigned the class 721, 725/728.

The division 73 deals with Sculpture and the Plastic arts. Included in this division are stone and metal cutting and engraving, numismatics, pottery and the artistic metal work like that of the jewellers, etc.

Drawing and sketching has been covered under 74. It includes drawing of cartoons, anatomical drawing,lettering, technical drawing and various minor crafts.

The painting, aesthetics theory, materials, styles, uses, applications have all been assigned to the class 75.0/75.061. The different types of painting: religious, portrait, nature landscapes and other types have been assigned to the classes 753/759.

The engraving has been assigned to the class 76. It includes the subjects like relief engraving, flat printing, commercial graphic art, etchings and prints.

An important subject under the class 7 is photography and cinematography which have been assigned to the class 77. It includes the photographic equipments, operations, and processes photographic systems, photomechanical proceses, special applications and techniques like microcopying projections, tele photography: cinematography colour photography. The collections of photography and films of individual artists have been classed under 779.

Music has been assigned to class 78. The general aspects which include the techniques, styles, use, etc. have been classed under 78.0/78.092. The theory of music has been put under 781 and different kinds of music under 782/785. The music for individual instruments has been put under 786/789.

The entertainments, games, sport have been assigned to the class 79. Here also the generalities have been put under 79.0/79.097. The various modes of entertainments such as the films, circuss, theater, have been assigned to 791/793. Different types of games, sports atheletics, gymanastics, mountaineering, wrestling, water sports, air sports, equestrian sports, fishing hunting and shooting have all been assigned to the classes 794/799.

EXAMPLES

1 Verma K M. Indian techniques clay modelling

Number Buiding

The Arts	7
Working methods	.021

models	.2
India	(540)
Sculpture	:73
Materials	,023
Clay	.4
Class Number	7.021.2(540):73.023.4

2 Wanmali, Sudhir. Regional planning for social facilities: An examination centre place concept and their applications — A case study of Eastern Maharashtra.

Number Building

Physical Planning	71
Regional Town and Country planning	711
Regional planning	.2
Social reform	:304
Maharashtra (Bombay)	(547.1)
Eastern Region	(547.1-11)
Class Number	711.2:304 (547.1-11)

3 Barnalla, S S. Strategy for rural development in the Sixth Plan '1978-83'.

Number Building

Physical planning	71
Regional, Town and country planning	711
Rural development	.3
India	(540)
Sixth Five Year Plan	:338.984"1978/83"
Class Number	711.3(540):338.984"1978/83"

4 Kliment, S A. Creative communication for a successful design practice.

Number Building

Architecture	72
Design planning	.011
Publicity	:659
Class Number	72.011:659

5 Institute of Electrical and Electronics Engineers. Recommended practice for providing of industrial and commercial buildings power system.

Number Building

Architecture	72
Public, civil buildings	725
Commercial and office buildings	.2
Electrical Engineering	:621.3
Distribution and control	.316
Earthing and earth	.99
Recommended practice/Standards	:389.6
Class Number	725.2:621.316.99:389.6
Alternate	621.316.99:725.2:389.6

6 Scerrat, U. Monument of civilization: Islam

Number Building

Architecture	72
Public, civil Buildings	725
Monuments	.94
Medeival	.033
Islamic	.3
Class Number	725.94.033.3

7 Van Straaten, J F. Ventilation and thermal considerations in school building design.

Number Building

Architecture	72
Buildings for education, etc.	727
Schools	.1
Ventilation, Heating	:697.9

Class Number 727.1 :697.9

8 Mehta, Rustin J. Masterpieces of Indian bronze and metal sculptures.

Number Building

Sculpture	73
Material	.023
Metal	.3
Bronze	:669.35'6
India	(540)

Class Number 73.023.3:669.35'6(540)

9 Unitracht. Enamelling

Number Building

Sculpture	73
Ceramic art	738
Enamel	.4

Class Number 738.4

10 Baer, C J. Electrical and electronic drawing instruments

Number Buildnig

Drawing and minor arts	74
Technical drawing	744
Instruments	.34

Electrical Engineering	:621.3

Class Number 744.34:621.3

11 Central Building Research Institute, New Delhi. Painting of wood and wood based materials

Number Building

Painting	75
Materials	.023
Wood	.1

Class Number 75.023.1

12 Graphics annual 1968/69 - An International annual of advertising graphics

Number Building

Engraving, Prints	76
Applied, commercial art	766
Advertising	:659
Design, display	.12
Yearbook	(05)
1968/69	"1968/69"

Class Number 766:659.12(05)"1968/69"

13 Rick, G D and Verbeek, L H. Artificial light and photography

Number Building

Photography and Cinematography	77
Processes	.02
Photographic equipment	:771
Lighting and light Sources	.44

Class Number 77.02:771.44

14 Emanuel, W D and Matgeson, A. Cameras: The fact how they work, what they will do and how they compare.

Number Building

Photography and Cinematography	77
Photographic equipment	771
Cameras	.3
Special applications and techniques	:778
Filming, Taking shots	.53

Class Number 771.3:778.53

15 National Micrographics Association (Maryland). All about microfilm cameras: A consumer handbook.

Number Building

Photography and Cinematography	77
Photographic equipment	771
Cameras, Enlargers	.318
Special applications and techniques	:778
Microcopying	.14
Handbooks	(021)

Class Number 771.318:778.14(021)

16 Spurr, Stephen H. Aerial photography in forestry

Number Building

Photography and Cinematograpy	77
Special applications and techniques	778

Aerial	.35
Forestry	:634.0

Class Number 778.35:634.0

17 Lloyed, B *ed.* Science and films

Number Building

Photography and Cinematography	77
Special applications and techniques	778
Cinematography/films	.5
Science	:5
Scientific research	.001.5

Class Number 778.5:5.001.5

18 Society of Motion Pictures and Television Engineers (New York). Motion pictures projection and theatre presentation manual

Number Building

Photography and Cinematography	77
Special applications and techniques	778
Cinematography	.5
Film projection	.55
Public, commercial buildings	:725
Cinemas	.824
Handbooks, Manuals	(021)

Class Number 778.55:725.824(021)

19 Kent, Eanle L *ed.* Musical accoustics: Piano and wind instruments

Number Building

Music	78
Keyboard instruments	786
Pianos	.2
Wind instruments	+788
Accoustics	:534
Musical sounds	.3

Class Number 786.2+788:534.3

20 Allan, Lockhart Douglas. Electronic music production

Number Building

Music	78
Percussion and mech instruments	789
Electric	.9

Class Number 789.9

21 Coote, J *ed.* Olympic report of India, 1976

Number Building

Entertainment, sports	79
Sports matches, etc	.092
Championship and records	.2
India	(540)
1976	"1976"

Class Number 79.092.2(540)"1976"

22 India, Ministry of Information and Broadcasting. Report of the working group on National film policy

Number Building

Entertainment, sports	79
Public entertainment	791

Films, cinema	.4
From the Point of plans	.001.1
India	(540)
Report	(047)

Class Number 791.4.001(540)(047)

23 Frank, Alnozo Mcmillan. Directing Shakespeare in the Contemporary theater

Number Building

Entertainment, sports	79
Theatre, Drama	792
Theatre and stagecraft Actors	.07
Shakespeare	:820 Shak

Class Number 792.07:820 Shak

24 Institution for Illuminating Engineering, Netherlands. Recommendations for lighting of football grounds.

Number Building

Entertainment, sports	79
Games	796
Football	.33
Point of view of space	.006.2
Exterior lighting	.628.971
Recommendations/standards	:389.6

Class Number 796.33.006.2:628.971.6:389.6

EXERCISES

1 Pendey, Dinabandhu. Notes on Indian iconography

2 Begde, Prabhakkar V. Ancient and medieval town planning in India.

3 Edward, Michael. Great buildings of the world: Indian temples.

4 De Breffney, Brian and Mott, George. Churches and Abbeys of Ireland.

5 Ellsworth, Ralph E. Academic library buildings

6 Baum, Andrew and Valins, Stuart. Architecture and social behaviour: Studies of population densities

7 Indian Institute of Public Administration, New Delhi. Building bye-laws zonic and sub-divisional control. Proceedings of the seminar held on 11-12 March, 1968.

8 Japan, Ministry of Education. Japanese scientific terms: Architecture.

9 Hagland, Elsa and Magnussan, L. Planning building and equipping Home Economics Centre.

10 Larkman, Brian and Glenister, S H. Contemporary design in metal work

11 India, Ministry of Information and Broadcasting. Panorama of Indian paintings.

12 Jacobson, C I. Developing: The negative technique.

13 Croy, O R. Camera close up.

14 Lobel, L and Dubbois, M. Sensitometry: The technique of measuring photographic materials.

15 National Micrographic Association. Formate and coding for computer output microfilm.

16 Hart, C A. Air photography applied to surveying

17 Mchwesster, N D and Mchwesster, A R. Guineess Book of Olympic records: Complete roll of medal winners

18 Mehra, G. Asian Games: A complete book of records

19 Viogil, Thomson. The state of music

20 Tom, Whealer. The Guitar book

21 Porting, Julius. Music in the life of man

22 Carter, J. How to do tricks in photography

23 National Council of Applied Economic Research (New Delhi). Cost benefit study of tourism.

SOLUTIONS

1 7.04(540)
2 711.4.032/.033(540)
3 726.1(540)
4 726.5/.7(415)
5 727.1/.3:727.8
6 711.13:72
7 711.51.69.009.182(082.2)“1968.03.12”
8 72:30.8=956
9 721.011:64.012
10 739
11 75(540)
12 77.023.4
13 771.3
14 771.534.5
15 778.14:681.327.57
16 778.35:528.71
17 79.092.2(100)
18 796(5):79.092.2
19 78.0(091)
20 787.6(021)
21 78.01
22 771.3:778.534
23 796.5.003.1(540)

8 LITERATURE. BELLES-LETTRES

1 INTRODUCTION TO THE CLASS

The term Literature, Belles-Lettres refers to the artistic writings worthy of being remembered. In general terms the term literature is meant to cover the writings having permanent and universal value because of their intrinsic excellence. These writings may be in any form and may be in any language in prose, verse. Such writings may be of individual authors or collections.

The class assigned to literature is the synthetic class in the UDC. The Language facet has been enumerated in the divisions 82/89. The various forms of literature have been given as -1/-8 and the history of literature 8(091) i.e. from the tables of common auxilaries. Literary science and techniques have been provided under the special auxilaries .01/.09; and the periods from the common auxiliary tables of time. No facet formula has been prescribed but the use of: Literature-Language-Period-Author is most suitable.

The class 4, as stated earlier, has been abondoned. Linguistics and Literature are brought together by means of special subdivision .07, which is also attachable to any specific language number under 82/89. Thus:

Philolgy, linguistics wiil get the number 8.07.

3 SCHEMATIC PRESENTATION OF THE CLASSES

8 Literature
Belles-Lettres →

82/89 Literature of individual Languages →

820	English Literature
830	German Literature
840	French Literature
850	Italian Literature
860	Spanish Literature
87	Classical (Latin and Greek) Literature
882	Russian Literature
884	Polish Literature
885	Czech Literature
891.2	Sanskrit Literature
.4	Hindi Literature
895.1	Chinese Literature
896	African Literature
899	Polynesian, Malayan Javanese Literature

3 DETAILS OF THE CLASS

Most of the details of this class have been discussed in the earlier section

EXAMPLES

1 Waldrop. Editor and editorial writer

Number Building

Languages, Literature and Linguistics	8
Literary science and technique	.08
Editing	.083

Class Number 8.083

2 Edmundson, H P *ed.* Proceedings of the national symposium on machine translation

Annotation The various papers discuss the literary translations with the help of the machines.

Number Building

Languages, Literature and Linguistics	8
Translations	.03
Machines	:681.177.7

Class Number 8.03:681.177.7

3 Heys, H. Preparation and production of technical handbooks

Number Building

Languages, Literature and Linguistics	8
Literary science and Techniques	.08
Writing	.082
Science and Technology (Scientific and Technical)	:5/6
Production (Printing, etc)	:655

Class Number 8.082:5/6:655

4 Pinchuck. Scientific and technical translation.

Number Building

Languages, Literature and Linguistics	8
English	820
Translation	.03
Science and Technology (Scientific and Technical)	:5/6
Class Number	820.03:5/6

5 Koestler, Arthur. Arrival and departure

Number Building

Languages, Literature and Linguistics	8
English	820
Novel	-31
By Koestler	Koestler
Class Number	820-31Koestler

6 George, Rowell. Late Victorian plays, 1890-1914

Number Building

Languages, Literature and Linguistics	8
English	820
Drama	-2
During 1890-1924	"1890/1914
Class Number	820-2"1890/1914"

7 Courtenay, Thomas. Commentaries on the historical plays of Shakespeare

Number Building

Languages, Literature and Linguistics	8
English	820
Drama	-2
By Shakespeare	Shak
Criticism	.09

Class Number 820-2Shak.09

8 Desmond, Maccarthy. William Somerset Maugham: An appreciation

Number Building

Languages, Literature and Linguistics	8
English	820
Novel	-31
By Maugham	Maugham
Critcism	.09

Class Number 820-31Maugham.09

9 Swift, Jonathan. Gulliver's travels and other writings. ed. By Richard Quantance

Number Building

Languages, Literature and Linguistics	8
English	820
Essays	-4
By Gulliver	Gulliver

Class Number 820-4Gulliver

10 Radhakrishnan, Sarvepalli. President Radhakrishnan's Speeches and writings

Number Building

Languages, Literature and Linguistics	8
English	820
Speeches	-5
By Radhakrishnan	Radhakrishnan
Class Number	220-5 Radhakrishnan

11 Naik, MK. Critical essays on Indian writings in English.

Number Building

Languages, Literature and Linguistics	8
English	820
Indian	(540)
Essays	-4
Criticism	.09
Class Number	820(540)-4.09

12 Downer, Alan S. American drama in 20th Century.

Number Building

Languages, Literature and Linguistics	8
English	820
America	(73)
Drama	-2
in 20th Century	"19"
Class Number	820(73)-2"19"

13 LaFontaine. Choices of fables.

Number Building

Languages, Literature and Linguistics	8

French	840
Short stories	-32
By LaFontaine	LaFontaine
Class Number	840-32LaFontaine

14 Allen, Walter. Tradition and dream: The English American novel from the twenties to our time.

Number Building

Languages, Literature and Linguistics	8
English	820
American	(73)
Novel	-31
During twenties to our time	"192/198"
Class Number	820(73)-31"192/198

15 Dandekar *ed.* Sanskrit and Maharashtra: A symposium.

Number Building

Languages, Literature and Linguistics	8
Sanskrit	891.2
Maharashtra	(547.1)
Symposium	(082.2)
Class Number	891.2(547.1)(082.2)

16 Prem Chand. Ghar Jamai aur pus ki reat.

Number Building

Languages, Literature and Linguistics	8
Hindi Language	891.43
Novel	-31
By Prem chand	Prem
Class Number	891.43-31 Prem

17 Munshi, Kanhaiya Lal and Munshi, Manik Lal. Swapan Siddhi ki khoj mein: Laikhak ki atma-katha ka teesra bhag

Number Building

Languages, Literature and Linguistics	8
Hindi	891.43
Biographies	-94
By Munshi	Munshi
Class Number	891.43-94Munshi

18 Nguyen, N B. A thousand years of Vietnamese poetry.

Number Building

Languages, Literature and Linguistics	8
Vietnamese	891.597
Poetry	-1
Past	“311”
Class Number	891.597-1“311”

19 Palmer, Eustace. Growth of the African novel (Bantu language)

Number Building

Languages, Literature and Linguistics	8
Bantu language	896
Novel	-31
History	(091)
Class Number	896-31(091)

EXERCISES

1 Gensler, Walter J. Writing guide for chemists

2 Sen, N B. Wit and wisdom of Jawahar Lal Nehru

3 Kansal, Hari Baba. Devnagri mein tar

4 Cross, Wilbur L. Development of the English novel

5 Joyce, James. Ulysses

6 Obiechina, Emmanuel. African popular literature: A study of Onitsha market pamphlets.

7 February, V A. The coloured stereotype in south African literature

8 Jones, Howare Mumford. Theory of American literature

9 Wilson, Edmund *ed.* The development of literature in the United States recorded by the man who made it

10 Bloom, Harold. Anxiety of influence: A theory of poetry

11 Blankenship, Russell. American literature: An expression of the national mind

12 Richards, Robert Fulton. Coincise dictionary of American literature

13 Hardy, Barbara *ed.* Critical essays on George Eliot.

SOLUTIONS

1 8.0254

2 820-5Nehru

3 891.43-31 Kansal

4 820-31(091)

5 820-31Joyce

6 820(6).09

7 896(6-13).09

8 820(73).01

9 820(73)(091)
10 8-1.01
11 820(73)(091)
12 820(73) : 030.8
13 820-31Eliot

9 GEOGRAPHY. BIOGRAPHY. HISTORY

1 SCOPE OF THE CLASS

History is that branch of knowledge which records the past events of human communities. It studies and explains such events, whereas Geography deals with the earth and its life. However, various aspects of the discipline are included differently in different schemes of classification. The Biographies of individuals and also those belonging to various professions can be classed either under 92 or under various subjects.

2 SCHEMATIC PRESENTATION OF THE CLASSES

9 Geography Biography History →

- **91 Geography, Exploration and Travel** →
- 92 Biography
- 93 History
- 94 Medieval and Modern History
- 940 History of Europe
- 950 History of Asia
- 960 History of Africa
- 970 History of North America
- 980 History of South America
- 990 History of Oceania and Polar regions

- 910 General Studies Accounts of Travels, *Expeditions*, etc
- 911 General geography (physical, Human, etc.)
- 912 Maps, Atlases, etc.
- 913 Regional Geography
- **914 Geography of Europe** →
- 915 Geography of Asia
- 916 Geography of Africa
- 917 Geography of North America
- 918 Geography of South America
- 919 Geography of Oceania and Polar regions

- 914.2 England and Wales
- 914.3 Germany and Central Europe
- 914.4 France
- 914.9 Netherlands, Belgium, Switzerland, etc.

3 DETAILS OF THE CLASS

The first section of this class 910/919 as indicated in the schematic presentation is used for geography, exploration and travel. Class 910 is devoted to general studies, accounts of travels, expeditions, voyages, and exploration and discovery. General geography (physical, human, and applied, etc.) have been classed under 911. The division 912 is used for geographical maps, atlases and globes. The division 914 to 919 are assigned to modern geography and descriptions of individual countries.

The class 92 is assigned to biography. Collective biographies relating to particular subject are classed as 92:.. ., e.g.

Studies of eminent physicists 92:53.

For general biographical presentation in any specific subject with emphasis on contribution to the subject rather than on biographies (092) is added with appropriate UDC number.

Biographical history of medicine 61(092)

The collective biographies of a particular country, race, and period are classed under 92(.).

Prominent men of England of the 19th century 92(42)"18".

In the case of individual biographies, names are added in brackets, and/or abbreviated, if desired, and arranged alphabetically.

Biography of Nehru 92 (Nehru).

The division 93 is used for History. The introduction of the class 930 is devoted to historical sciences including subsection on history as a science and study of sources. Class 931/939 is devoted to ancient history. The medieval and modern history has been assigned to 94. Class 940 deals with history of Europe. History of different countries are assigned to the clasess 941/999 according to the divisions of the common auxiliary of space (4/9).

EXAMPLES

1 Rawat, I S. Indian explorers of the 19th century: An account of exploration in the Himalayas, Tibet, Mangolia and Central Asia.

Number Building

Geography	91
General Studies	910
Expedition	.4
Himalayan	(235.24)
and Central Asia	(235.24+58)
During 19th century	"18"

Class Number 910.4(235.24+58)"18".

2 India, Ministry of Information and Broadcasting. Delhi: History and places of interest

Number Building

Geography	91
Account of travels	910
Delhi	(545.5)
Guide Books	(026)

Class Number 910(545.5)(026)

3 Meyer, H M. Readings in physiography: Geomorphology

Number Building

Geography	91
Physical & Human	911
Physical	.2
Geomorphology	:551.4

Class Number 911.2:551.4

4 Hoyt, J B. Geography of steel technology

Number Building

Geography	91
Physical and Human Geography	911
Physical	.2

Steel	:669.14
Class Number	911.2:669.14

5 Shabad, T. China's changing maps: National and regional development 1948-71

Number Building

Geography	91
Maps, Atlases	912
China	(51)
Economic development	:330.19
During 1948-71	"1948/1971"
Class Number	912(51):330.19"1948/1971"

6 Forest Research Institute, Dehra Dun. Sixteen maps of India-1980

Number Building

Geography	91
Maps	912
India	(540)
1980	"1980"
Class Number	912(540)"1980"

7 Meux, A H. Readings in geographical maps

Number Building

Geography	91
Maps	912
Cartography	:528.9
Class Number	912:528.9

.8 Marinators, Spyridon. Crete and Mycenae

Number Building

Geography	91

Regional geography	913
Greek (Other regions from 932/939)	913.2

Class Number 913.2

Note The divisions of 932 to 939 have been used in the above example.

9 Durai, Raja Singam *ed.* Ananda Coomaraswamy: Remembering and remembering again; A tribute to Kala Yogi Ananda Coomraswamy in words and pictures

Number Building

Biography (Individual) Coomaraswamy	92 (Coomaraswamy)

Class Number 92 (Coomaraswamy)

10 Kaul, Neelama *Comp.* Handbook of information scientists and librarians in India

Number Building

Biography	92
Librarianship	:02
From the point of view of persons	.007
India	(540)

Class Number 92:02.007(540)

11 Feldman, Anthony and Ford, Peter. Scientists and inventors

Number Building

Biogrophy	92
Science	:5
From the point of view of persons	.007

Class Number 92:5.007

12 Khosla, Raj R. Men of science and technology in India

Number Building

Biography	92
Science and technology	:5/6
From the view point of personnel	.007
India	(540)

Class Number 92:5/6.007(540)

13 Possefic, Gregory L *ed.* Ancient cities of the Indus

Number Building

History	93
Civilization	930.85
Indus	(282.253)

Class Number 930.85(282.253)

14 Maurois, Andre. Illustrated history of England

Number Building

History of Europe	940
England	942
Illustrated	(089.1)

Class Number 942(084.1)

15 Czekns, Sander *ed.* Great October; Socialist community and India

Number Building

History, Geography	9
History of Russia	947
Political Science	:32
Civil war	323.27
Indian History	:954

Class Number 947:323.27:954

16 Japanese Official Archives Records

Number Buidling

History	95
Japan	952
Official records	(0932.2)
Class Number	952(093.2)

17 Bhuyan, Surya Kumar. Official sources of Assam history

Number Building

History	95
India	954
Assam	.11
Official records	(093.2)
Class Number	954.11(093.2)

18 Gupta, Sisir. Kashmir: A study of India-Pakistan relations

Number Building

Medieval and modern History	95
India	954
Kashmir	.61
International relations	:327
India and Pakistan	(540:549)
Class Number	954.61:327(540:549)

EXERCISES

1 Kidron, Michael and Segal, Ronald. State of the world atlas

2 Clark, Grahame. Dawn of civilization: First world survey of human cultures in early times

3 Cellini, Benvenuto. The life of Benvuenuto Cellini written by himself

4 Wilson, Ellen. American painter in Paris: A life of Mary Cassatt

5 Posener, Georges. A dictionary of Egyptian civilizations

6 Boudet, Jacques and others. A history of Rome and the Romans

7 Bayley, Emily. The Gold calm: An English lady's life in Moghul Delhi

8 Qureshi, Samnia. Legacy of the Indus: A discovery of Pakistan

9 Mishra, V C. Geography of Rajasthan

10 Amarik, A S and Mongcit A L. In the quest of fading civilization: Outlines of archeology (in Russian)

11 Fisher, Robert C *ed.* Fodor's Europe 1978

12 Nehru, Jawahar Lal. A bunch of old letters

13 Mayer, Haroldon and Khon, Clyde F. Readings in urban geography

14 Ronne F. Antarctic conquest: The story of the Rome expedition 1946-1948

15 Rao, S R. Lothal and the Indus civilization

SOLUTIONS

1	912(100)
2	930.85(100)"—"
3	92 (Cellini)
4	92:75 (Cassatt)
Alternate	92 (Cassatt)
5	930.85(621/623)(038)
6	937
Alternate	945.63
7	954"15/18"
8	954.9
9	915.446
Alternate	91(544.6)

10 93.85=82
11 914(026)“1978”
12 92 (Nehru)
13 91-201
14 910.4(239.9)“1946/1948”
15 930.85(282-253)

BIBLIOGRAPHY

1 BATTY, David. The Universal Decimal Classification. *In Encyclopedia of Library and Information Science.* New York, Marcel Dekkar, V 32, P 125-46.

2 BHATTACHARYA, G. Classifying by UDC and CC: A comparative study. *Annual DRTC Seminar.* 9, 1971. Paper CB. P 303-51.

3 BHATTACHARYA, G. General theory of library classification and classfying according to UDC. *Library Science with slant to Documentation.* 9, 2; 1972; 197-228.

4 BROWN, A G and others. Introduction to subject indexing: A programmed text. v2. UDC and chain procedure in subject cataloging. London, Clive Bingley. Pp 203.

5 CALES, T W and KIRK, D B. Application of UDC to machine searching. *Journal of Documentation.* 23, 1967; 208-215.

6 COLLISON, Robert L *ed.* Progress in Library Science. London, Butterworths. 1967. Pp 222.

7 CURWEN, Anthony G. Revision of classification schemes: Policies and practices. *Journal of Librarianship.* 10, 1 1978; 19-38.

8 DAHLBERG, I. Major developments in classification. *In* Advances in Librarianship. V 7, 1977. P 12-92.

9 DAHLBERG, I. Possibilities for a new Universal Decimal Classification. *Journal of Documentation.* 27; 1971; 18-36.

10 FOSKET, A C. Universal Decimal Classification. London, Clive Bingley. 1973. Pp 172.

11 FOSKET, D J. Trends in research on UDC. *Library Science with Slant to Documentation.* 16; June 1979; 62-64.

12 FREEMAN, Robert R. The management of a classification system: Modern approaches examplified by the UDC project of the American Institute of Physics. *Journal of Documentation.* 23; 1967; 304-320.

13 FREEMAN, Robert R and ATHERTON, P. File organisation and search strategy using the Universal Decimal Classification in mechanical retrieval systems. *In* SAMUELSON, K J. Mechanized information storage, retrievel and dissemination. Proceedings of the FID/IFIP joint conference held at Rome. June 14-17, 1967. Amsterdam, Noth Holland Publishing Company. 1968. Pp 729. P 122-52.

14 GOPINATH, M A and MALHOTRA, V K. Geographical schedule in CC, UDC and DC. *Library Science with Slant to Documentation.* 3, 1966: 169-211.

15 GUIDE To Universal Decimal Classification (UDC). BS 1000 C 1963 (FID 345). London, BSI. 1963. Pp 128.

16 HINDSON, Richard. Reflections on the utilization of the Universal Decimal Classification. *Aslib Proceedings.* 31, 6; June 1979; 305-311.

17 INTERNATIONAL FEDERATION FOR DOCUMENTATION. Universal Decimal Classification (UDC) revision and publication procedure. The Hague, The Federation. 1968 (FID 429).

18 LANGRIDGE, D W. Classification and indexing in the Humanities. London, Butterworths. 1976. Pp 143.

19 MALTBY, Arthur *ed.* Classification in the 1970's: A discussion of developments and prospects for the major schemes. London, Clive Bingley. 1972. Pp 269.

20 LLOYD, G A. Universal Decimal Classification. *In* MALTBY, Arthur, *ed.* Classification in the 1970's. London, Clive Bingley. P 147-165.

21 MALTBY, Arthur, *ed.* Classification in 1970's: A second look. rev. ed. London, Clive Bingley. 1976. Pp 262.

22 MALTBY, Arthur. Sayers' manual of classification for librarians. Ed. 5. London, Andre Deutsch. 1975. Pp 336.

23 MANN, Margaret. Introduction to cataloging and classification of library books. Ed 2. Chicago, American Library Association. 1943. Pp 276.

24 MILLS, J. Modern outline of library classification. Bombay, Asia. 1962. Pp 343.

25 MILLS, Jack. The Universal Decimal Classification. V I. Rutgers Graduate School of Library Service, New Bruswick New Jersey. 1964. Pp 132.

26 MOLGARD-HANSEN, R and RIGBY, M *eds.* Seminar on UDC in mechanized information retrieval system. Copenhagen, 2—6 September, 1968; Proceedings. (FID/CR Report No. 9).

27 PERRAULT, J M. Towards a theory of UDC: Essays aimed at structural understanding and operational improvement. London, Clive Bingley. 1969. Pp 241.

28 RANGANATHAN, S R. Prolegomena to library classification. Ed 3. Bombay, Asia. 1967. Pp 640.

29 RICHARDSON, Ernest Cushing. Classification: Theoretical and practical. Ed 3. Hamden. Connecticut, The Shoe String Press. 1964. Pp 228.

30 SATYANARAYAN, V V V. Common auxiliaries in the UDC and common isolates in CC: A comparative study in their practice. *Iaslic Bulletin.* 22, 2; 1977; 77-84.

31 SCHNEIDER, K. UDC in mechanized indexing and information retrieval system. *In* SAMUELSON, K J. Mechanized information storage, retrieval and dissemination. Proceedings of the FID/IFIP Joint conference held at Rome, June 14-17, 1967. Amsterdam, North Holland Publishing Company. 1968. Pp 729. P 153-59.

32 THOMAS, J R. Practical application of UDC. *In* BAKEWELL, K G B. Classification for information retrieval. Archon Books, Clive Bingley. 1978. Pp 100. P 23-29.

33 UNIVERSAL DECIMAL Classification, Abridged English edition. Ed 3. London, BSI. 1961.

34 VICKERY, B C. Classification and indexing in science. Ed 3. London, Butterworths. 1975. Pp. 228.

35 VICKERY, B C. Classification of cheimal substances: An historical survey. *In* FOSKET, D J. and PALMER, B I. Essays in Librarianship in memory of William Charles Berwick Sayers. London, The Library Association. 1961. Pp. 228.

APPENDIX

LIST OF UDC SCHEDULES

FULL EDITION

1 BS 1000 : —Universal Decimal Classification (UDC). English Full Edition

2 BS 1000 : Auxiliaries: 1974 Auxiliary signs and subdivisions (except those of place)

3 BS 1000: Auxiliaries I(e):
Part 1 : 1980 Common auxiliaries of place (1/2)

4 BS 1000(0) : 1972 UDC 0 Generalities

5 BS 1000(1) : 1969 (1980) UDC) 1 Philosphy (excluding UDC 159.9 Psychology)

6 BS 1000(159.9) : 1969 (1980) UDC 159.9 Psychology

7 BS 1000(2) : 1973 UDC 2 Religion

8 BS 1003(3/30) : 1980 UDC 3/30 Social sciences in general. Sociography

9 BS 1000(31) : 1982 UDC 31 Statistics. Demography. Population studies

10 BS 1000(32) : 1971 UDC 32 Politics

11 BS 1000(330) : 1969 UDC 330 Economics

12 BS 1000(331) : 1971 UDC 331 Labour

13 BS 1000(333) : 1969 UDC 333 Land and landed property

14 BS 1000(334) : 1969 UDC 334 Co-operation

15 BS 1000(335) : 1969 UDC 335 Socialism

16 BS 1000(336) : 1971 UDC 336 Finance. Public finance. Customs, banking and monetary system

17 BS 1003(337) : 1969 UDC 337 Customs policy

18 BS 1000(338) : 1970 UDC 338 Production of wealth. Production. Trend of the economy. Economic situation

19 BS 1000(339) : 1970 UDC 339 Distribution, conservation and consumption of wealth

20 BS 1000(35/354) : 1972 UDC 35/354 Public administration

21 BS 1000(355/359) : 1971 UDC 355/359 Military arts and science. National defence. Armed forces

22 BS 1000(36) : 1970 UDC 36 Social Welfare and relief (excluding UDC 368 Insurance)

23 BS 1000(368) : 1971 UDC 368 Insurance

24 BS 1000(37) : 1975 UDC 37 Education. Teaching. Training Leisure

25 BS 1000(38/382) : 1969 UDC 38/382 Trade. Commerce

26 BS 1000(383-389) : 1971 UDC 383/389 Communications. Transport. Metrology. Weights and measures

27 BS 1000(39) : 1970 UDC 39 Ethnology. Ethnography

28 BS 1000(5/50) : 1974 UDC 5/50 Exact sciences in general. Nature study. Conservation

29 BS 1000(51) : 1976 (1981) UDC 51 Mathematics

30 BS 1000(52) : 1977 UDC 52 Astronomy, Astrophysics. Space research. Geodesy

31 BS 1000(53) : 1974 (1979) UDC 53 Physics

32 BS 1000(54) : 1972 (1979) UDC 54 Chemistry Crystallography. Mineralogy

33 BS 1000(55) : 1982 UDC 55 Earth sciences. Geology. Geophysics

34 BS 1000(56) : 1981 UDC 56 Palaeontology

35 BS 1000(57) : 1979 UDC 57 Biological sciences in general. Virology. Microbiolony

36 BS 1000(58) : 1979 UDC 58 Botany

37 BS 1000(59) : 1980 UDC 59 Zoology

38 BS 1000(6/60) : 1979 UDC 6/60 Applied science in general. Inventions and discoveries

39 BS 1000(61/611) : 1968 (1979) UDC 61/611 Medical science in general. Anatomy

40 BS 1000(612) : 1968 UDC 612 Physiology

41 BS 1000(613): 1983 UDC 613 Hygiene generally. Personal. health and hygiene

42 BS 1000 (614) : 1969 UDC 614 Public health. Accident prevention

43 BS 1000(615) : 1979 UDC 615 Pharmaceutics. Therapeutics. Toxicology

44 BS 1000(616) : 1970 UDC 616 Pathology.

45 BS 1000(617) : 1968 UDC 617 Orthopaedics. Surgery. Ophthalmology

46 BS 1000(618) : 1968 UDC 618 Gynaecology. Obstetrics

47 BS 1000(619) : 1978 UDC 619 Veterinary science

48 BS 1000(62/62-9) : 1980 UDC 62/62-9 Engineering, technology in general. Characteristics and details of machines, equipment, plant, processes and products

49 BS 1000(620) : 1973 UDC 620 Materials testing. Commercial materials. Power stations. Economics of energy

50 BS 1000(621/621.0) : 1973 UDC 621/621.0 Mechanical engineering in general. Nuclear technology

51 BS 1000(621.1/.22) : 1979 UDC 621.1 Heat engines in general. Steam power, steam engines. Boilers. UDC 621.22 Water power. Hydraulic energy

52 BS 1000(621.3) : 1975 UDC 621.3 Electrical engineering

53 BS 1000(621.4) : 1976 UDC 621.4 Heat engines (other than steam engines)

54 BS 1000(621.5) : 1971 (1979) UDC 621.5 Pneumatic energy, machinery and tools. Refrigeration and liquefaction techniques and plant

55 BS 1000(621.6) : 1973 (1979) UDC 621.6 Fluids handling. storage and distribution plant and equipment

56 BS 1000(621.7) : 1977 UDC 621.7 Plastic or chipless working, forming and treatment of materials

57 BS 1000(621-8) : 1976 UDC 621.8 Mechanical power transmission, Machine elements. Gearing. Materials handling. Mechanical attachments, fixings, fasteners. Lubrication

58 BS 1000(621.9) : 1976 UDC 621.9 Working, machining with chip formation. Cutting, grinding, sheet working etc

59 BS 1000(622) : 1979 UDC 622 Mining

60 BS 1000(623) : 1974 (1979) UDC 623 Military engineering

61 BS 1000(624) : 1981 UDC 624 Civil and structural engineering in general

62 BS 1000(625) ; 1976 UDC 625 Civil engineering of land transport. Railway engineering. Highway engineering

63 BS 1000(626/627) : 1977 UDC 626/627 Hydraulic (water) construction works

64 BS 1000(628) : 1982 UDC 628 Public health engineering. Water. Illuminating engineering

65 BS 1000(629) : 1977 UDC 629 Transport vehicle engineering

66 BS 1000(63/632) : 1981 UDC 63/632 Agriculture in general. Forestry. Plant injuries, diseases and pests. Plant protection

67 BS 1000(633/635) : 1981 UDC 633/635 Specific crops. Horticulture

68 BS 1000(636/639) : 1981 UDC 636/639 Animal breeding. Animal produce. Hunting. Fishing

69 BS 1000(64) : 1971 UDC 64 Home economics

70 BS 1000(65/651 + 657/659) : 1968 UDC 65/651+657/659 Industrial and business management and organization. Communication

71 BS 1000(654) ; 1969 UDC 654 Telecommunication services : organization, administration and operation

72 BS 1000(655) : 1970 UDC 655 Graphic industries. Printting. Publishing. Book trade

73 BS 1000(656/656.7) : 1968 UDC 656/656.7 Transport services. Traffic organization and control

74 BS 1000(656.8/.9) : 1972 UDC 656.8/.9 Postal services and adminstration. Other kinds of transport service

75 BS 1000(66/66.09) : 1971 UDC 66/66.09 Chemical and related industries. Chemical technology

76 BS 1000(661) : 1971 UDC 661 Chemicals (fine, heavy etc.)

77 BS 1000(662.1/.5) : 1970 UDC 662.1/.5 Explosives

78 BS 1000(662.6/.9) : 1970 UDC 662.6/.9 Fuels

79 BS 1000(663/664) : 1971 UDC 663 Beverages. Stimulants. Narcotics. UDC 664 Manufacture and preservation of solid foods

80 BS 1000(665) : 1979 UDC 665 Oils. Fats. Waxes. Adhesives. Gums. Resins

81 BS 1000(666) : 1971 UDC 666 Glass and allied industries. Ceramics, clay and allied industries. Gysum, lime, cement and allied industries

82 BS 1000(667) : 1979 UDC 667 Colour industries (dyes, inks, paints, etc.)

83 BS 1000(669) : 1979 UDC 669 Metallurgy

84 BS 1000(67/673) : 1971 (1979) UDC 67/673 Various industries, trades and crafts. Precious metal and precious stone industries. Metal goods

85 BS 1000(674) : 1970 UDC 674 Timber and woodworking industry

86 BS 1000(675) : 1971 UDC 675 Leather industry. Processing of animal skins

87 BS 1000(676) : 1971 676 Pulp and paper industry. Production of pulp, paper and board

88 BS 1000(677) : 1981 UDC 677 Textile industry

89 BS 1000(678) : 1981 UDC 678 Industries based on macromolecular materials. Rubbers. Plastics

90 BS 1000(679) : 1979 UDC 679 Industries based on various processable materials. Stone industry

91 BS 1000(68/681.3) : 1972 UDC 68/681.3 Finished article in general. Precision mechanisms. Horology. Instrumentation. Data processing

92 BS 1000(681.5) : 1976 UDC 681.5 Automatic control engineering

93 BS 1000(681.6) : 1971 UDC 681.6 Graphic reproduction machines and equipment

94 BS 1000(681.7) : 1975 UDC 681.7 Optical apparatus and instruments

95 BS 1000(681.8/.9) : 1972 UDC 681.8/.9 Technical acoustics. Musical instruments. Engraving and sculpting machines

96 BS 1000(682/683) : 1973 UDC 682 Smithery. Farriery. Hand-forged ironwork. UDC 683 Ironmongery. Hardware. Locksmithing. Gunsmithing. Bottling. Lamps. Stoves

97 BS 1000(684) : 1979 UDC 684 Furniture and allied trades

98 BS 1000(685) : 1972 UDC 685 Travel, sports, games and other equipment

99 BS 1000(686) : 1971 UDC 686 Bookbinding. Metallizing. Mirror making. Stationery

100 BS 1000(687) ; 1970 UDC 687 Clothing industry. Articles of toilet

101 BS 1000(688/689) : 1980 UDC 688/689 Fancy goods. Toys. Hobbies

102 BS 1000(69) : 1981 UDC 69 Building

103 BS 1000(7/7.0) : 1976 UDC 7/7.0 The arts in general : theory, history, techniques

104 BS 1000(71) : 1976 UDC 71 Physical planning

105 BS 1000(72) : 1975 UDC 72 Architecture

106 BS 1000(73/76) : 1977 UDC 73/76 Various arts and crafts

107 BS 1000(77) : 1968 UDC 77 Photography

108 BS 1000(78) : 1971 UDC 78 Music

109 BS 1000(79) : 1971 UDC 79 Recreation. Entertainment. Amusements. Pastimes

110 BS 1000(8) : 1971 UDC 8 Language. Linguistics. Literature.

111 BS 1000(9) : 1972 UDC 9 Geography. Biography. History

112 BS 1000(9) : Supplement No. 1:1972 Index to the selection of common auxiliaries of place for use with UDC 9

ABRIDGED EDITION

BS 1000A:1961 Universal Decimal Classification (UDC). Abridged English Edition.

GUIDE TO THE UDC

BS 1000C:1963 (1980) Guide to the Universal Decimal Classification (UDC)

P-NOTES AND EXTENSIONS TO THE UDC

P-Notes (proposed modifications to UDC) are working documents issued irregularly with texts variously in English, French or German.

The Cumulated UDC Supplement (-1964) FID No. 420) cumulates the first five series of 'Extensions and Corrections to the UDC'. The cumulated UDC supplement 1965-1975 (FID No. 543) cumulates series 6 to series 9 No. 1.

Extensions and Corrections to the UDC (FID No. 248) is published annually; each issue includes all P-Notes authorized during the previous year, and also cumulates the previous issues in the same series. A series comprises three issues and covers three years.

INDEX

Accountancy, 148
Adhesives, 150
African Languages, 104
Agriculture, 147
    Cashewnutes, 147
    Dairy, 147
    Irrigation, 147
Algebra, 115
Alphabetical Mnemonics, 16
Analytical chemistry, 119
Applied Sciences, 130-33
Architecture, 162
    School Building, 163
    Office Building, 162
Arts, 60
    Scope of, 157
Astronomy, 117
    Satellites, 117
Auxilaries, 21
    Common,22
    Order, 32
    Special 30

Bauxite Ore, 123
Bibliographic Classification, 4
Biography, 187.88
    Scope of, 187
Biological Sciences, 123-24
Biology, 123
Botany, 125
    Roots, 125
Buddhism, 70
Budgets and Budgeting, 85
Building Industry, 151
    Masonary, 151
    Painting, 152
Business Management, 148

Cameras, 165
Catalogue, 49
    Public Libiaries, 49
Cashewnutes, 147
Ceramic Sculpture, 163
Chemical Technology, 149
    Industrial water, 150
    Metallurgy, 150
    Adhesives, 150
Chemistry, 118
    Analytical, 119
        Chrometography, 120
        Micro Analysis, 119
        Qualitative Analysis, 119
    Experimental, 119
    Inorganic, 120

  Organic, 120
    Methane, 121
  Physical, 118
Christianity, 68
Chrometography, 20
Cinematography, 165
  Application and Techniques, 165
    films, 165
  Photography and equipments, 165
    Cameras, 165
Citation Order, 40
  Standard Facet Formula, 42
Civil Engineering, 139
Civilization, History, 188
Classification, 50
Collateral Sciences, 122
Colon Classification, 4
Cost Accountancy, 148
Conductivity, 118
Connecting Symbols, 33
  Bracket—Naught—Brackets, 32
  Bracket—One—Stroke
  Nine, Bracket—33
  Brackets, 33
  Colon, 33
  Eduals, 33
  Hyphen, 34
  Inverted Commas, 33
  Plus, 33
  Point Double Naught, 34
  Point—One, to point, Nine, 34
  Stroke, 33
Commerce, 90
  Foreign Trade, 90
    Export, 90
  Metrology, 91
  Metric System, 91
  Supply and Demand, 90
Common Auxilaries, 23
  Form, 23
  Language, 23
  Place, 25
  Race & nationality, 28
  Time, 28
Communication, 48
Comparative Psychology, 58
Cytology, 124

Dairy, 148
Dectectors, 142
Demography, 82
  Population crises, 82
Dewey Decimal classification, 3
Dictionaries, 50
Directories, 51
Diseases, 138
Dogmatic Theology, 64
  God, 68
Drawing, 163
  instruments, 163

Ecology, 125
Economic Geology, 123
  Econometary, 83
  Labour, 84
  Land Property, 85
  Policy, 83
  Private finance, 85
  Production, 87
    industrialization, 87
    National plans, 88
    Planning, 87
  Public finance, 85
Editing, 52
Education, 89
  Secondary Education, 89
Elections, 83
Electrical Engineering, 141
Electricity, 118
Emotions, Psychology, 58
Enamel, Sculpture, 163
Engineering and Technology, 139
  Civil, 144
  Electrical, 141
    Transmission, 142
    Dectectors, 142
  Material testing, 140
    Surface Defects, 140
  Mechnical, 141
  Military, 144
  Nuclear, 141
  Public health, 145
Epistemology, 60

Entertainment, 158,167
    Public, 167
    Sports, 167-68
    Theatre, 168
Ethics, 62
    Social, 62
Europe, History, 188
Excise duty, 86
Expedition Geography, 185
Experimental chemistry, 119
Export, 90
Extension Sign, 23

Football, Games, 168
Foreign Trade, 90
Form Auxiliary, 23
French Language, 102

God, Religion, 68
Generalities, 43
Geography, 181
    General Studies, 185
    Maps, 186
    Physical, 185
    Regional, 187
    Scope of, 180
Geology and Meterology, 121-23
    Economic, 123
        Mineral oil, 123
    Meterology, 122
        Weather, 122
    Prospecting, 121
Geometry, 115
Germanic Languages, 102
Grammer, Linguistics, 98

Hindi Language, 104
Hinduism, 71
History, 188
    Civilization, 188
    Europe, 188
    India, 189
        Assam, 189
        Kashmir, 189
    Japan, 188
    Russia, 188
Holyscriptures, 68

India, History, 189
Indo European Languages, 103
Industrial Production, 87
Inorganic Chemistry, 120
Irrigation, 147
Instruments, Drawing, 163
International Affairs, 83
Islam, 71

Japan, History, 188
Journalism. 51,

Labour Economics, 84
    Manpower, 84
Language Auxiliary, 23
Languages, 97
    African, 104
    French, 102
    Germanic, 102
    Hindi, 104
    Indo-European, 103
    Origion of, 97
    Semitic, 104
    Western, 101

Law, 88
Libraries, Administration, 49
    Management, 49
    Classification, 50
    Reference work, 50
Library, 49
Library of Congress, 3
Linguistics, 94,98
    Grammar, 100
        Semantics, 100
        Syntax. 100
    Lixicography, 99
        Origion and development, 98
    Phonetics, 99
Literature, 173-78
    Scope of, 171
Logic, 54,60
    Epistemology, 7
    Scientific Inquiry, 60
        Methods, 60

Management, 148
  Accountancy, 148
    Cost, 148
  Business, 148
  Libraries, 49
  Planning, 148
Manpower, 84
Maps 186
Masonary, 151
Mathematics, 108,115
  Algebra, 115
  Analysis, 116
  Geometry, 115
  Mechanised Calculations, 116
  Probability, 116
  Scope of, 108
  Theory of Nambers, 115
Medical Sciences, 138
  Diseases, 138
  Pathology, 139
  Public Health and Safety, 138
    Pollution, 138
  Therapeutics, 138
    Radio theory, 138
Medicine, 130
Mechanical Engineering, 141
Mechanised Calculations, 116
Metallurgy, 150
Metaphysics, 54
Meterology, 122
Methane, Organic Chemistry, 121
Metric System, Metrology, 91
Microanalysis, Chemistry, 119
Microbiology, 123
Military Engineering, 144
Mineral Oil, 123
Mnemonics, 16
  Alphabetical, 18
  Scheduled, 17,19
  Systematic, 17
Monopolies, Production, 86
Musics, 167
  Instruments, 167
    Electric, 167
    Wind, 167

Natural Sciences, 108
Non Christian Religion, 69-60
Notation, 12

Office Building, Architecture, 163
Optics, 117
Organic Chemistry, 120

Painting, 152
Philology, 96
Philosophy, 54
Photographic Equipments, 165
Physical Chemistry, 118
Physical Geography, 185
Physics, 117
  Electricity, 118
    Conductivity, 118
  Optics, 117
Place Auxiliary, 25
Planning, Management, 148
Point of View Auxiliary, 29
Political Science, 82
  Elections, 83
  International Affairs, 83
Pollution, 138
Population Crises, Demography of, 82
Practical Classification, 35,36
  Steps, 36
Private Finance, 84
  Capital Investment, 85
  Gold Standards, 84
Probability, 116
Production, 87
  Industrial, 87
Production, Economics, 87
Prospecting, Geology, 121
Public
  Administration, 89
  Entertainment, 167
  Finance, 85
    Budgets, 85
    Taxes, 86
  Health and Safety, 138
  Libraries, 49
    Catalogue, 49
Psychology, 54,58
  Ability testing, 60

  Comparative, 58
  Emotions, 58
  Motivation, 58
  Sensation, 57
  Sub Consciousness, 60

Qualitative Analysis, Chemistry, 119

Race and Nationality Auxiliary, 28
Radiotheraphy, 138
Recreation, 158
Reference Work, 50
Regional Geography, 187
Relation Sign, 23
Religions, 69—72
  Ancestor worship, 69
  Buddhism, 70
  Christianity, 68
  Dogmatic Theology, 68
    God, 68
  History, 68
  Holyscriptures, 68
  Non Christian, 69—70
    Greek and Roman, 69
    Hinduism, 71
    Islam, 71
    Neo—Hinduism, 71
    Zoroastrianism, 72
  Scope of, 64
Roots, Biology, 125
Russia, History, 188

Satellites, 117
Scheduled Mnemonics, 17,19
School Building, Architecture, 163
Science, 114
Scientific Inquiry, 60
Scientific Methods, 60
Sculpture, 163
  Ceramic, 163
    Enamel, 163
Secondary Education, 89
Semantics. 100
Seminal Mnemonics, 17, 19
Semitic Languages, 104
Sensation, Psychology, 58
Social Ethics, 62
Social Sciences, 76—93
  Commerce, 77
  Economics, 77
  Education, 77
  Ethnography, 77
  Jurisprudence, 77
  Law, 77
  Political Science, 77
  Public Administration, 77
  Scope of, 75
  Statistics, 77
Sports, 158
Sports Entertainment, 168
Special Auxiliaries, 30
Standard Facet Formula, 42
Statistical Sciences, 82
  Sampling Techniques, 82
Subject Bibiliography, 48
Supply and Demand, 90
Syntax, Linguistics, 100
Systematic Mnemonics, 17

Taxes, 86
Technology, 114,130
Technical Writing, 47
Theatre, Entertainment 168
Theology, 64
Theory of Numbers, 115
Therapeutics, Medicine, 138
Time Auxiliary, 27
Transmission, Electrical, 142

Universal decimal Classification
  Classes, 35
  Development, 1
  Editions, 7
  Order of Symbols, 33
  Origion, 5
  Organizational Support, 8
  Revision, 8
  Significance, 10

Vedism, 70

Weather, 122
western Languages, 101

Zoology, 125
  Arthopode, 125
    Insects, 125
Zoroastrianism, 72

CENTRAL ARCHAEOLOGICAL LIBRARY
New Delhi

76917

Library Science [illegible] Classification

Classification Library [illegible]

CATALOGUED.

Central Archaeological Library,

NEW DELHI.

70917

Call No. 025.401
Saa/Seh

Author— J.L. Sardana,
R.L. Sehgal

Title— universal
classification

"A book that is shut is but a block"

CENTRAL ARCHAEOLOGICAL LIBRARY

GOVT. OF INDIA
Department of Archaeology
NEW DELHI

Please help us to keep the book clean and moving.